

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2167.—Vol. XLVII.

LONDON, SATURDAY, MARCH 3, 1877.

WITH SUPPLEMENT. {PRICE SIXPENCE }
PER ANNUM, BY POST, £1 4s.

R. JAMES H. CROFTS, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

Business transacted in all descriptions of MINING Stocks and Shares (British Foreign), Consols, Bonds (Foreign and Colonial), Railways, Miscellaneous, Insurance, Assurance, Telegraph, Shipping, Canal, Gas, Water, and Shares.
Business negotiated in Stocks and Shares not having a general market value.
Business in COLLIERIES and IRON Shares, and in the principal WAGON and FACTORY COMPANIES OF THE NORTH OF ENGLAND AND SCOTLAND.
Business in all the principal COTTON SPINNING Shares.
J. H. Crofts, having now established CORRESPONDING AGENCIES in all the principal Towns of the United Kingdom, is prepared to deal in the various LOCAL Stocks and Shares at close market prices.
Accounts opened for the Fortnightly Settlement.
Monthly and Daily Price Lists issued.
Bankers: City Bank, London; South Cornwall Bank, St. Austell.

DEALINGS in the following, or part:—
Argentine, 25%. 20 East Caradon. 20 Parry Mount, 11s.
Barranclough, 11s. 10 Exchequer, £1 15s. 3d. 50 Penrith, 12s. 6d.
Cambridge, 9s. 10 Eberhardt, £8 13s. 9d. 15 Penrith, 16s. 3d.
Carnegie, £1 5s. 20 Flagstaff, £3 15s. 3d. 10 Richmond, £6%.
Carnegie, £1 5s. 20 Glyn, £2 2s. 9d. 50 Rookhope, 19s.
Carnegie, £1 5s. 10 Gt. West Van, 8s. 10 Tankerville, £3%.
Carnegie, £1 5s. 15 Gt. Retallack, off. wd. 15 Van Consois, £2 13s. 9d.
Carnegie, £1 5s. 100 Javali, 10s. 6d. 25 W. Tankerville, £1%.
Carnegie, £1 5s. 50 Llanrwst, £1%. 5 West Chiverton, £19.
Carnegie, £1 5s. 10 Marke Valley. 10 Wh. Grenville, 17s. 6d.
Carnegie, £1 5s. 40 North Laxey, 17s. 3d. (call paid).
Carnegie, £1 5s. 100 Pestana, 3s. 9d. 15 W. Crebor.
* Shares sold for forward delivery (one, two, or three months) on deposit of 20 per cent.
SPECIAL BUSINESS in POSITIVE ASSURANCE SHARES.
Business on hand in all the principal TIN, COPPER, and LEAD Shares.

FOREIGN BONDS.—ARGENTINE.—EGYPTIAN.—RUSSIAN,
SPANISH, TURKISH. SPECIAL BUSINESS, and latest information.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

RAILWAYS.—SPECIAL BUSINESS. Fortnightly accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

AQUARIUM, HOTEL, AND MISCELLANEOUS SHARES.—
SPECIAL BUSINESS in Brighton Aquarium, Royal Westminster Aquarium, John Crossley and Sons, Lawes Chemical, Milner's Telegraph Construction, Globe Preference, Royal Insurance, Severn and Canal, Earle's Shipbuilding, North-Eastern Banks.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

BRITISH LEAD SHARES.—BUSINESS in all leading Market
Mines and latest Special Information from the various districts.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

COAL AND IRON SHARES.—BUSINESS in all the
PRINCIPAL SHARES and DEBENTURES.—FOR SALE:—
Bilston, 47%. 10 Consol. 50 Skerne, £7 1s. 3d.
Bilston, 47%. 25 Chapel House, £23%. 65 Thorp's Gawber, £23%.
Bilston, 47%. 10 Kakerome, £23%. 25 W. Cumberland, £23%.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

COTTON SPINNING SHARES.—BUSINESS in all OLDHAM
SHARES, and in those of other DISTRICTS.
* SPECIAL BUSINESS in the following at the prices named:—

Name of Mill.	Last four dividends, per cent.	Closing quotations, March 2.	Buyers.	Sellers.
Central	30, 26, 30, 10	£ 3 3/4	£ 3 3/4	
Greenacres	30, 30, 30, 10	£ 4 1/2	£ 4 1/2	
Green Lane	30, 25, 30, 25	£ 7 1/2	£ 8 0	
Oldham Twist	30, 25, 25, 12	£ 2 1/2	£ 2 1/2	
Rayton	30, 20, 20, 10	£ 2 1/2	£ 2 1/2	
Shaw	30, 20, 20, 10	£ 2 1/2	£ 2 1/2	
Star	30, 20, 20, 10	£ 2 1/2	£ 2 1/2	
Windsor	30, 20, 20, 10	£ 2 1/2	£ 2 1/2	

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

R. WILLIAM H. BUMPUS,
STOCK AND SHARE BROKER,
44, THREADNEEDLE STREET, LONDON, E.C.
[Established 1867.]

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal
HOME and FOREIGN MINES.

BUMPUS devotes special attention to
MINING INVESTMENTS,
and is in a position to give reliable information and advice respecting the same.

SALE, at prices annexed:—
Ashton, 24s. 10 East Van, £23%. 25 New Quebrada, £4 6s. 3d.
Barranclough, 11s. 50 East Caradon, 20s. 6d. 50 North Laxey, 18s.
Cambridge, 9s. 20 Eberhardt, £8 13s. 9d. 40 Parry Mount, 10s. 6d.
Carnegie, £1 5s. 25 Flagstaff, £3 15s. 3d. 50 Penrith, 12s. 6d.
Carnegie, £1 5s. 60 Frontino, 38s. 6d. 20 Penrith, 17s.
Carnegie, £1 5s. 10 Gt. West Van, 8s. 10 Roman Gravels, £13%.
Carnegie, £1 5s. 20 Glyn, £2 2s. 9d. 70 Rookhope, 19s. 6d.
Carnegie, £1 5s. 20 Hingston, 13s. 6d. 25 Richmond, £6%.
Carnegie, £1 5s. 100 I. X. L., 18s. 9d. 15 South Condurrow.
Carnegie, £1 5s. 75 Javali, 10s. 6d. 20 Tankerville, £3%.
Carnegie, £1 5s. 50 Kapanga, £23%. 5 Van, £23%.
Carnegie, £1 5s. 40 Last Chance. 25 Van Consois, £2 13s. 9d.
Carnegie, £1 5s. 20 Leadhills, £3%. 20 Wh. Grenville, 17s. 6d.
Carnegie, £1 5s. 50 Marke Valley, 22s. 20 W. Tankerville, £1 13s.

IMPORTANT.
Capitalists, and all who seek SOUND and PROFITABLE INVESTMENTS,
following are confidently recommended, and they will be found worth the
time of every Investor, viz:—
ARGENTINE COMPANY (LIMITED).
CONDOR COMPANY OF CHILI (LIMITED).
BLUE TENT HYDRAULIC GOLD MINES (LIMITED).
Particulars of the Mines, and every information concerning the several
companies, may be obtained (in the form of a Circular) on application to Mr.
R. W. H. Bumpus, who has special facilities for dealing in the shares.
RICHMOND CONSOLIDATED.—EBERHARDT.—FLAGSTAFF.—Investors
interested in these companies, who may be desirous of obtaining in-
formation and advice as to operations in the shares at the present time, are re-
quested to communicate with the undersigned.

WILLIAM HENRY BUMPUS, SWORN BROKER.
Offices: 44, Threadneedle Street, London, E.C.

Business transacted in Stock Exchange Securities and Miscellaneous shares of
description. Fortnightly accounts opened. References given and required
necessary. A Stock and Share List forwarded free on application.

BANKERS.—THE NATIONAL PROVINCIAL BANK OF ENGLAND, E.C.

WILLIAM B. COBB,
62, CORNHILL, LONDON, E.C.
Business transacted in every description of British and Foreign Stocks, Mining
Shares, &c.
Fortnightly accounts opened in rails, foreign stocks, and mining shares.
Bankers: The Alliance Bank (Limited).

E. SIMPSON, STOCK AND SHARE DEALER,
6, GREAT WINCHESTER STREET BUILDINGS, LONDON, E.C.,
THE FOLLOWING SHARES, free of commission:—
Argentine, 25%. 10 Great Laxey, £21. 70 Penrith, 12s. 6d.
Barranclough, 11s. 30 Glyn, £23%. 30 Richmond, 11s. 3d.
Cambridge, 9s. 60 Glyn, £23%. 20 Penrith, 16s. 3d.
Carnegie, £1 5s. 70 Javali, 11s. 60 Santa Barbara, £23%.
Carnegie, £1 5s. 40 Leadhills, £3%. 20 Tankerville, £3%.
Carnegie, £1 5s. 50 Marke Valley, 17s. 6d. 10 Van, £23%.
Carnegie, £1 5s. 40 North Laxey, 17s. 6d. 60 Van Consois, £2 13s. 9d.
Carnegie, £1 5s. 30 New Quebrada, £3. 10 W. Chiverton, £19.
Carnegie, £1 5s. 45 Penrith, 16s. 3d. 20 W. Tankerville, £1 13s.
100 Parry Mount, 10s. 6d.

MESSRS. PETER WATSON AND CO
54, OLD BROAD STREET, LONDON, E.C.
BUSINESS IN STOCKS AND SHARES.
RAILWAYS, BANKS, DIVIDEND LEAD MINES, &c.
BANKERS: THE ALLIANCE BANK (LIMITED).
A CIRCULAR published MONTHLY. Single Copy, 6d.; Annually, 5s.

M. R. ALFRED E. COOKE,
STOCK AND SHARE DEALER,
76, OLD BROAD STREET, LONDON, E.C.
(Established 1853.)

Transacts every description of Business in ENGLISH FUNDS, RAILWAY
STOCKS, and MISCELLANEOUS SHARES.
SPECIAL ATTENTION GIVEN TO MINING ENTERPRISE.
TRADING COMPANIES' SHARES (including COTTON SPINNING) dealt in
at close prices.
COLLIERY SHARES dealt in on best terms.
SHARES IN NEGLECTED and DEPRESSED SECURITIES dealt in.
Every description of STOCKS and SHARES, either for INVESTMENT or
SPECULATION, BOUGHT and SOLD at net prices.

1877.—SAFE AND LUCRATIVE MINING and other
INVESTMENTS, to yield about TEN PER CENT.,
with a prospect of a great rise.

SPECIAL INVESTMENT CIRCULAR.
The new number will be ready on MONDAY next. It is requested that
early application be made, as only a limited number will be left on hand. Post
free. It is the MOST UNIQUE CIRCULAR issued, published by—
MR. ALFRED E. COOKE,
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(Established 1853.)

JOSEPH JOHN PYNE,
MINING BROKER
AND
STOCK AND SHARE DEALER,
6, BISHOPSGATE STREET LONDON, E.C.

Mr. PYNE having been connected with MINING ENTERPRISE for up-
wards of FOURTEEN YEARS, and having been a DIRECTOR of MINES
in SHROPSHIRE, MONTGOMERYSHIRE, CARDIGANSHIRE, CAR-
NARVONSHIRE, YORKSHIRE, and in VENEZUELA, has had great op-
portunities of becoming acquainted with this particular branch of industry,
and will always be desirous of giving every information in his power to all
Investors transacting business with him.
ALL DESCRIPTIONS OF SHARES are dealt in, including BRITISH and
FOREIGN STOCKS, and RAILWAY SECURITIES.
BANKERS.—THE ALLIANCE BANK (LIMITED).

MR. T. E. W. THOMAS, SHARE BROKER,
5, GREAT WINCHESTER STREET BUILDINGS, E.C.
Established 1857.

The following are the latest prices at which business could be done. Where the
difference between the buying and selling price is wide transactions may be
effected at an intermediate price:—

Buyers.	Sellers.	Buyers.	Sellers.
Almada, 2s. 6d.	2s. 6d.	New Zealand Kapanga, £ 2 1/2	£ 3 1/4
Bodidris, 1 1/2	1 1/2	Parry Mount, 10s.	11s.
Dewerant, 2 1/2	2 1/2	Penrith, 16s.	17s.
Don Pedro, 9s.	11s.	Penrith, 16s.	17s.
Eberhardt, 8 1/2	8 1/2	Princelymmon, 11s.	13s.
East Caradon, 7 1/2	10	Princelymmon, 11s.	13s.
East Van, 9 1/2	10	Princelymmon, 11s.	13s.
Exchequer Gold, 15 1/2	17 1/2	Princelymmon, 11s.	13s.
Flagstaff, 3 1/2	3 1/2	Princelymmon, 11s.	13s.
Frontino, 1 1/2	1 1/2	Princelymmon, 11s.	13s.
Glenroy, 2 1/2	2 1/2	Princelymmon, 11s.	13s.
Great Laxey, 2 1/2	2 1/2	Princelymmon, 11s.	13s.
Glyn, 2 1/2	2 1/2	Princelymmon, 11s.	13s.
Javali, 10s.	11s.	Princelymmon, 11s.	13s.
Last Chance, 3 1/2	3 1/2	Princelymmon, 11s.	13s.
Ladywell, 1 1/2	1 1/2	Princelymmon, 11s.	13s.
Leadhills, 6 1/2	6 1/2	Princelymmon, 11s.	13s.
Marke Valley, 3 1/2	3 1/2	Princelymmon, 11s.	13s.
North Laxey, 15s.	17s.	Princelymmon, 11s.	13s.
New Quebrada, 4 1/2	4 1/2	Princelymmon, 11s.	13s.

MR. E. J. BARTLETT, STOCK AND SHARE DEALER.
No. 30, GREAT ST. HELEN'S, LONDON, E.C., has SPECIAL BUSI-
NESS in St. Patrick, Wheel Whips, Penrith, South Tolcarne, East Lovell
East Van, Pennant, East Caradon, West Craven Moor, Lead Hills, Minera, Parry
Mountain, West Godolphin, and Wheel Grenville shares.

MESSRS. W. J. TALLENTIRE AND CO.,
STOCK AND SHARE BROKERS,
20, CHANGE ALLEY, CORNHILL, LONDON, E.C.

Transact business in Stock Exchange Securities and Mining Shares of every de-
scription, either for immediate cash or the usual bi-monthly settlements, and also
advise personally or by letter to executors, trustees, capitalists, and investors
of every class in the selection of Securities for safe and profitable investment, their
experience of the markets, extending over a period of more than sixteen years,
together with special facilities for acquiring information, enabling them to act
beneficially for clients.

They have established Corresponding Agencies in all the principal towns of the
United Kingdom, and are prepared to deal in the various local Stocks and Shares
at close prices. Orders per post or telegram receive prompt attention.
INVESTORS SHOULD APPLY for a copy of Messrs. W. J. TALLENTIRE and
Co.'s Circular, SENT FREE. It contains valuable information on Foreign
Stocks (especially South American, Egyptian, and Turkish), Railways, and Lead
Mines.

MESSRS. ARCHARD JONES AND CO.,
STOCK AND SHARE DEALERS,
No. 1, NEW BROAD STREET, LONDON, E.C.

The "Investment Circular and Financial Record" (gratis and post-free) gives
full particulars of the best investments, paying from 5 to 10 per cent.

MESSRS. ENDEAN AND CO., STOCK AND SHARE
DEALERS, 85, GRACECHURCH STREET, LONDON, E.C.

MR. JAMES STOCKER, STOCK AND SHARE BROKER,
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
(Established 1848.)

BUSINESS transacted in all kinds of STOCK EXCHANGE SECURITIES,
also in every description of BRITISH and FOREIGN MINING, COLLIERY,
MANUFACTURING, and other SHARES.

SPECIAL BUSINESS in the following:—
Ashton, 24s. Glyn, 42s. 6d. Pennant, £5%.
Aberlunant, 11s. Hingston Down, 13s. 9d. Prince of Wales, 4s. 6d.
Bedford United. Ladywell, 21s. Rookhope, 19s.
Chapel House, £23%. Leadhills, £3%. Roman Gravels, £13%.
Cathedral, 21s. Llanrwst, 38s. Tankerville, £3 11s. 3d.
Combarmin, 8s. Marke Valley, 20s. Trebail Consols, 8s. 6d.
Dewerant, £23%. North Laxey, 16s. 9d. Van Consois, £23%.
Devon Consols, £24%. Pateley Bridge, £23%. West Godolphin.
East Van, £23%. Penrith, 16s. W. Tankerville, 35s. 6d.
Glenroy, 30s. Penrith, 12s. W. Wye Valley, £3%.
Wheal Crebor, £3.
Wheal Grenville (call paid), 17s.

Almada, 2s. 3d. Flagstaff, £33%. New Quebrada, £24%.
Argentine, £23%. Frontino, 3s. 9d. Penrith, 16s.
Cedar Creek, 15s. 6d. Gold Run, 11s. Port Phillip, 9s. 6d.
Chontales, 8s. 3d. I. X. L., 17s. 6d. Richmond, £6%.
Don Pedro, 9s. 9d. Javali, 9s. 6d. San Pedro, 18s. 6d.
Eberhardt, £8%. Last Chance, 17s. 6d. South Aurora, 7s.
Exchequer, 38s. 6d. New Zealand Kap., £3%. Tecoma, 11s. 3d.

JAMES STOCKER, SWORN BROKER.
Consols, Foreign Bonds, Railways, Bank, Telegraph, Gas, and all miscellaneous
Shares bought and sold, and fortnightly accounts opened for same. Shares sold
for forward delivery on receipt of cover. List of prices and every information for-
warded on application. References given and required when necessary.

BANKERS: LONDON AND WESTMINSTER.

M. R. CHARLES THOMAS,
MINING AGENT, STOCK AND SHARE DEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

Seventh Edition. Price One Shilling.
INVESTMENTS AND SPECULATIONS.
Published by—
CHARLES THOMAS, No. 3, GREAT ST. HELEN'S, LONDON, E.C.

MESSRS. A. W. THOMAS AND CO.
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MINING AGENTS, AND STOCK AND SHARE DEALERS.
BUYERS OF MINERS and Lishburne.

"INVESTMENTS AND SPECULATIONS FOR 1877."
Price Sixpence.

FERDINAND R. KIRK, STOCKBROKER,
5, BIRCHIN LANE, E.C.

BUSINESS in the following:—
50 Chapel House, £33%. 20 National Dis., £10%. 20 Pawson, £6%.
20 Bilson, £7%. 20 Rookhope, 19s.
MINING.—Eberhardt, Richmond, and Flagstaff continue to absorb a large
share of attention, and for some time past have paid handsomely when properly
managed. The most promising Progressive Mines appear to be Pandora, Pen-
nant, Rookhope, Parry Mountain, and North Laxey.
Further particulars of FERDINAND R. KIRK, Stockbroker, 5, Birch Lane, E.C.

GROGWINION LEAD MINE (LIMITED).
MESSRS. H. HALFORD AND CO., STOCK AND SHARE
BROKERS, OF EXCHANGE CHAMBERS, CHANGE ALLEY,
LOMBARD STREET, LONDON.

Strongly recommend the ABOVE MINE as one of the BEST and SAFEST
MINING INVESTMENTS. The dividends are declared half-yearly—the one
new share paid is at the rate of 20 per cent. per annum, against 12 1/2 per cent.
last time. Every information upon application to the above.

WYE VALLEY AND WEST WYE VALLEY LEAD MINES.
The shares of these companies should be bought. The prospects have recently
improved very much, and good discoveries have been made.

NOTICE.
BROKERS OR DEALERS HAVING SHARES FOR SALE
in either GROGWINION, WYE VALLEY, or WEST WYE VAL-
LEY MINES, can FIND IMMEDIATE PURCHASERS on application to—
H. HALFORD AND CO.,
STOCK AND SHARE BROKERS,
EXCHANGE CHAMBERS,
CHANGE ALLEY, LOMBARD STREET.

MR. EDWARD ASHMEAD, 62, CORNHILL, LONDON,
LONDON MINE AGENT, ACCOUNTANT, AND AUDITOR.

Constantly connected with Mining since 1856. Information given on Mining
Properties as an Investment. Purchases and Sales of Mining Shares effected.
Statistical Table of the Dividend Mines of 1876, and of the Highest and Lowest
prices of Mining Shares. Post free, price Sixpence.

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER
20, BISHOPSGATE STREET, LONDON, E.C. (Established 20 Years),
can sell the following SHARES, at prices annexed:—

100 Almada, 8s. 6d.	20 Goreded and Merlyn, £4 1s. 3d.	80 Port Phillip, 10s. 6d.
10 Altam, 25%, ex div.	20 Glyn, £23%	20 Pandora.
10 Argente, 45%	20 Glenroy, £13%	75 Parry Mount, 10s. 3d.
25 Birdseye Creek, 18s. 6d.	40 Great W. Van, 7s. 9d.	40 Penrith, 12s. 3d.
60 Chontales, 8s.	25 Gold Run, 11s. 6d.	20 Rookhope, 19s.
15 Chapel House, £3 3s. 9d.	20 I. X. L., 17s. 9d.	15 Richmond, £6%
25 Cakemoor, £23%	15 Leadhills, £3 3s. 9d.	25 St. Harmon, £2 18s. 6d.
25 Chikago, £24%	2 Lisburne, £6s.	75 South Aurora, 7s. 6d.
25 Condes de Chili, £45%	5 Minera, £1s.	60 Sweetland, 7s.
30 Derwent, £23%	25 Marke Valley, 19s.	30 San Pedro, 17s.
20 Eberhardt, £23%	30 Nth. Laxey, 18s. 3d.	20 Van Consois, £2 12s.
25 Exchequer, £1 14s. 6d.	5 Penrith.	25 W. Tankerville, £1 1/2.
10 East Caradon, 19s.	15 Pateley Bridge, £2.	20 W. Craven Moor, 12 1/2.
30 Frontino, £1.	25 Penrith, 16s.	20 Wheel Grenville, 17s. 6d.
20 Flagstaff, £3 14s.	150 Pestana, 3s. 9d.	

Shares Bought and Sold at net prices. Telegrams promptly attended to.

MR. THOMAS THOMPSON, JUN., 1, PALMERSTON
BUILDINGS, BISHOPSGATE STREET, LONDON, E.C.
Mr. THOMPSON strongly recommends the purchase of the shares of the CHAPEL
HOUSE COLLIERY COMPANY (Limited) for investment. This company, with-
standing the stagnation in trade, clears a profit of 2s. per ton on its coal, and
when the new works are completed he present handsome returns will be much
augmented.

MESSRS. GREGORY, WHITAKER, AND CO.,
STOCK AND SHARE DEALERS,
81, BISHOPSGATE STREET WITHIN, LONDON.

Begin to notify to their clients and investors generally that Shares offered in the
LLANRWST LEAD MINE at low prices, through the medium of this Journal,
are rarely, if ever, delivered to the Buyer. To ensure the delivery of Shares
bought, purchasers are cautioned to pay cash only on the delivery of trans-
actions, accompanied by the holders' certificates.

MESSRS. J. TAYLOR AND CO.,
MINING ENGINEERS AND INSPECTORS,
86, LONDON WALL, LONDON, E.C.
Have Agents in England, Scotland, Wales, and the Continent.

MESSRS. ENDEAN, FISHER, AND CO.,
STOCK AND SHARE DEALERS,
3, LOMBARD COURT, LOMBARD STREET, LONDON, E.C.

From a thorough knowledge of their business, based upon many years' experience,
are PREPARED TO ADVISE on every description of SECURITY for INVEST-
MENT or SPECULATION.

Their sources of information, Home and Foreign, being various and extensive,
E. F. and Co. will clients and the general public may place the most implicit con-
fidence in such advice as they deem it their duty to give. Statements emanating
from their firm will be founded only on well-authenticated facts, and may, there-
fore, be relied upon.

Orders or Telegrams for the Sale or Purchase, for cash or account, promptly
executed on receipt.

BODIDRIS LEAD MINE.—Shares now in demand at 1 to 1 1/2.—
The prospects of this undertaking are most encouraging, and the mine,
although now only sunk to a shallow depth, bids fair to become of equal impor-
tance to its neighbour, the celebrated Minera, and other well-known rich lead
mines in the same district. There is every indication that as development pro-
gresses, and greater depth is attained, the lodes already opened upon will largely
increase in their yield of ore. Further particulars may be had on application to
Messrs. ENDEAN, FISHER, AND CO.

COTTON SPINNING SHARES.—SPECIAL BUSINESS at the
following prices:—

Star	2 1/2	2 1/2
Rayton	2 1/2	2 1/2
Shaw	2 1/2	2 1/2
Windsor	2 1/2	2 1/2
Central Spinning	2 1/2	2 1/2
Greenacres	4 1/2	4 1/2
Green Lane	70	75
Twist	20	25

ENDEAN, FISHER, AND CO., 3, LOMBARD COURT, E.C.

NOTICE.—We regret to find that some of our clients have been
induced to PURCHASE LLANRWST SHARES, advertised in this Journal
at low prices about two months since, and up to the present time have been
unable to obtain the delivery of the same. Purchasers of these shares when
offered at low prices will do well to see that the transfer is certified by the Secre-
tary of the company, or the certificate attached before they part with their money.

ENDEAN, FISHER, AND CO., 3, LOMBARD COURT, E.C.

Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. XIV.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. 8C.
(Formerly Student at the Royal Bergakademie, Clausthal).
[The Author reserves the right of reproduction.]

PART II.†

PROSPECTING FOR MINERALS.

SHODING OR COSTEANING, AND BORING.

In by far the greater majority of instances the discovery of mineral deposits has been purely accidental; in later times, as geology has become more and more a well-defined science, so has the discovery of beds of useful minerals in unknown districts been greatly assisted by following out well-known geological principles.

The discovery of some of the oldest mines in Europe dates long before any authenticated history of most of the European nations. The copper pyrites and galena deposit at Rammelsberg, near Goslar, North Germany, is said to have been discovered in the following manner:—A knight, who had been hunting in the neighbouring forest, overcame with fatigue, fastened his horse to a tree, and laid down to rest on the mountain side. After some time the impatient animal commenced pawing the ground, and the knight, as he was about to remount, struck by the glitter of the bare surface, broke off a piece of the rock (galena), and took it to the king, who ordered the mine to be worked. Almost every old mining district has such like legends, which may (as probably the above) possess some truth in them, others carry at once in themselves their own contradiction. Such are some of the reports founded on superstition and witchcraft, mists, and dancing lights, resembling will-o'-the-wisps, which are said to indicate themselves on summer evenings at the outcrop of veins; stripes on grass and seed-lans, on which no dew shows itself in the morning, or on which the snow melts away most rapidly; and the divining rod, about which a host of books have been written. The persistency with which a belief in this latter was held up to the middle of the present century, even by men of otherwise undoubted ability and intelligence is remarkable. The divining rod (*virgula divinatoria*) or dowsing-rod, consisted of two pieces of hazel twig, tied together with packthread or twine. The rods formerly used were shoots of one year's growth that grew forked; but separate shoots tied together at their root ends were used. Hazel rods, cut in winter and dried, were said to answer best; but oak, willow, apple-tree suckers, &c., were said to answer tolerably well. The district is examined by the dowsing walking slowly over it from north to south, holding the rod in his hands at an angle of 70°. On approaching the lode the rod is said to feel loose in the hands, and is repelled towards the face, but when the foremost foot comes over the lode it is irresistibly drawn down until the lode is passed, when it will be again repelled.

When prospecting is prosecuted on rational and scientific principles the following are circumstances and indications which should be sought for or examined.

(a).—The form and appearance of the surface of the ground might not at first appear to have any connection with the occurrence of deposits; but there are some geological formations which appear to have a distinct surface appearance, and consequently allow one to draw a probable conclusion as to the character of the formation, and the possibly contained mineral deposits.† The position and direction of a lode has not unfrequently been determined by the peculiar appearance of the grass or herbage, by plants, such as the calamine violet (*Viola calaminaria*) for calamine deposits, sometimes by the colour of the freshly ploughed soil.

(b).—Fragments of broken rocks or even from veins may be discovered. Supposing such a fragment of a vein to have been discovered in a valley, or on the side of a hill, it would be termed a shodestone, and a search undertaken to discover its original site would be termed "shoding." As it would, without doubt, have been carried downwards to its present position, search would be made for similar stones up the beds of any neighbouring streams or further up the hill side. It is probable that in this manner the Clausthal veins (Harz) were found by tracing fragments from the bed of the Innerste below Wildermann. It is not necessary that the shodestone itself should actually contain any ore; it may be sufficient to have found the minerals most usually accompanying it. As the lode is approached the stones will become more and more abundant; should the miner pass the lode they will altogether disappear, and he must retrace his steps. A vein being the fissure of a rock should show two distinct cases, enclosing between them the crystallised and metallic minerals, but at its outcrop we shall have most probably no such distinction. The prolonged action of the atmosphere and rain and water will have caused a decomposition and disintegration of the vein at the outcrop, and which may be completely hid under a small layer of alluvial earth, washed down over it from the upper-lying ground. We may have a mass consisting of disintegrated fragments of the vein and alluvium cemented together by chemical action, accompanied with such decomposition of the vein as to afford indication of its presence, and thus may have been produced the broil or bryl of the lode, from which the shodestones have been poured forth. The term shode itself is probably derived from the German verb, "schütten," to pour forth. In many cases the broil will be strongly coloured with oxide of iron, or even of a green or blue colour, &c., if copper is present. In following up the indications of shodestones, it will be well to distinguish between heavy, light, friable, and hard materials. Iron ores can seldom be carried any distance without great change in form or chemical composition. Galena, though liable to be broken into small cubes, may be carried to a considerable distance without losing its characteristics. Anthracite coal may be carried to a great distance without losing much of its form, while bituminous coal would soon become unrecognisable. These will give us some indication as to the probable distance of the deposit, and comparatively whether we are approaching or going away from the deposit.

(c).—Springs or running streams often afford valuable information, though these indications, without further examination, should not be absolutely relied on, especially in the case of ferruginous springs. Salt springs, naptha springs, exhalations of carburetted hydrogen gas, &c., may also be mentioned.

(d).—Neighbouring deposits will also in many cases give tolerably, and in others quite reliable, proof of the existence of a deposit. Suppose that we notice in a neighbouring district a set of shafts which have been sunk upon a lode in a tolerably straight line, then, if the distance be not unduly great, we should be justified in searching for its continuance in the same straight line. We should naturally look first for the back of the lode; this will be comparatively easy if the surface of the ground be sufficiently bare. The regularity of the outcrop will be much affected by the different kind of rock and by the variation of the surface level, and also by the direction and amount of dip.

Deposits of minerals may be sometimes accidentally discovered in making cuttings or driving tunnels for a railway, or in a mine a cross-heading may strike upon a vein more valuable than the original one.

The search for minerals is generally carried out by "costeaning" or "boring." When the deposit has an outcrop or lies at but a small depth below the surface, and when it is not covered by younger strata, costeaning will suffice for obtaining information with respect to strike, dip, thickness, and the mode of occurrence and position with respect to the neighbouring strata; when, however, the deposit has no outcrop, and is covered by other formations to any depth, borings must be resorted to. Except by means of "core" boring,

however, boring gives us no information with respect to strike, dip, and thickness of a deposit, although if more than one bore-hole be put down we may be able to draw probable conclusions from the results as to some of these matters.

A.—COSTEANING may have for its object the discovery of a lode or the examining of one of which the back has been discovered. It is best applicable in the case of nearly vertical deposits—such as veins; but for stratified deposits, which are but slightly inclined, it is seldom used.

(1).—COSTEANING TRENCHES: These are usually driven at right angles to the supposed strike of the vein, an outcrop of the deposit, or of a combination of veins, which generally, as we have seen, run more or less parallel. They should be driven at least 3 ft. wide; the depth will be dependent on the thickness of the alluvial soil. The soil dug out is thrown on both sides, so as to be replaced without much labour—in fact, the soil may often be thrown back into the already explored part of the trench. On rich soil, or where much water is met with, costeaning trenches become expensive. If the soil is rich, and much water is met with, or the ground very hilly, it may be more advisable to drive a level or drift entirely beneath the ground.

(2).—COSTEANING PITS: These are more suitable for searching for stratified deposits (which are not inclined at too great an angle) than for lodes. For stratified deposits they are in most cases more suitable and less expensive than trenches. They are usually ranged in a line at right angles to the supposed strike of the deposit; their distance apart depends on the thickness and dip of the deposit, and on the contour of the surface of the ground—all of which, as we have seen, affect the direction of the outcrop. The pits are usually made rectangular in plan, 4 ft. by 2 ft. 6 in. In some cases these shafts may serve permanently and be at once used for the extraction of the ore.

B.—BORING: Boring is the method of penetrating the ground by means of rods of comparatively small size to a great depth; the different objects to and for which boring may be applied can be divided into four different classes:—

1.—For the purpose of testing the ground to shallow depths, for foundations, building stone quarries, &c.

2.—For exploratory, precautionary, and incidental purposes in a mine, chiefly stratified—for example, to prove the presence of deposits, for searching for a seam of coal which has been cut off by a fault, for relieving the upper portions of a mine (or shaft when being sunk from two or three different levels) from water by tapping into the lower, or for tapping water from an upper seam into a lower one, for the purposes of ventilation, &c.

3.—For affording access to subterranean water, such as for artesian wells and brine springs.

4.—The application of boring to the sinking of shafts. In the South Wales coal field, where the coal crops up to the ground all round, boring is resorted to to prove the presence of seams of coal in any particular portion of the ground, its depth, thickness, &c., where perhaps the coal measures are not seen at the surface, being covered up by a newer formation. Similarly in the district bordering on the Silesian coal field and the southern (Bavarian) portion of the Saarbrücken coal field where the coal measures dip under overlying newer formations. Boring is resorted to to prove the extension of these deposits. In searching for superficial deposits, such as turf and bog iron ore; for deposits at no great depth, as some deposits of brown coal, the massive irregular deposits of hematite in North Lancashire and Cumberland, boring has been of great use, but as a general rule it is inapplicable in searching for mineral veins. The results it gives may turn out very deceptive, and it affords no indication in passing through some portions of the veins, where, for example, the vein may be only a parting, or line of junction, or filled up with country rock, so that the chances are but small of it striking a rich pocket of ore, or a portion of the vein sufficiently rich or well defined to give any definite indications. Bore-holes are often used in coal mines for tapping off large reservoirs of gas or water, especially in the Permian strata, which would otherwise be given off quite suddenly. In approaching old workings which may contain water, and often under great pressure, then in no case should the workings be approached from below without a bore-hole being kept 8 or 10 ft. in advance, or even more, according to the nature of the rock. In compact rock 2 or 3 ft. may suffice, but in loose earth, &c., from 10 to 15 ft. is necessary. As the old workings may be approached at an angle more or less acute, flanking holes should also be employed. Long plugs should be kept ready to be inserted at once if the water is tapped, and only withdrawn when the engines, pumps, and everything has been got ready to deal with a large influx of water. Bore-holes are also kept in advance in sinking shafts and wells to guard against the sudden eruptions from artesian wells or accumulations of gases. A bore-hole may often be advantageously employed to relieve a rich pocket of ore which is being worked by tapping the water off into the underlying level.

During the sinking of a shaft for a mine, which has been already worked for some time, so that the shaft can be commenced at several different levels at once, a bore-hole may be driven from one division to the other, serving both for the ventilation and the relieving of the different divisions from water.

The art of boring appears to have had its birth in the northern districts of Italy and France. The honour of first having invented the art of boring has been attributed to the Chinese, though it is still doubtful whether it was not first introduced there by Europeans. Count Héricart de Thury gives the honour to Bernard de Palissy. The first work which contains any reference to the application of boring to mining is the "Anleitung zu der Bergbaukunst," by Christopher T. Delius, published in 1770. Since then a great number of works, both in French and German, have appeared, the best being "Erdbohrkunde," by A. H. Beer, of the Mining School at Przibram, published in 1858.

In England the great surface of outcrop of the coal measures, the great regularity of the seams, and the comparatively shallow depth to which it has been necessary to penetrate to the coal measures, have not made any great claims on the art of boring, especially to great depths, so that until within the last few years only the primitive method of boring with a spring pole appears to have been known or in use.

In the ordinary meaning of the word, boring takes place usually only in soft strata, such as clay or marl, and then only to an inconsiderable depth; but since the invention of the Diamond Rock Drill boring, in the ordinary meaning of the word, takes place in strata the hardest, and to very considerable depths. The process usually consists in breaking the rock into small pieces by the lifting and allowing to fall of a tool at the bottom of a bore-hole, the small pieces being afterwards raised by means of a sledge or pump. Boring then takes place in two distinct ways—the one we shall call "percussive boring," the other "rotary boring." Percussive boring may take place with the use of rigid rods, to which the tool is attached, or with the use of a rope, which latter is usually known as the Chinese method.

Following the arrangement adopted by Mr. Beer, we shall first describe the "percussive boring," and afterwards "rotary boring."

PERCUSSIVE BORING.—With the use of rigid rods. With the use of a rope.

As many of the arrangements, tools, &c., are similar in both cases, as well as to those employed in rotary boring, we shall, in the first place, describe such tools and arrangements which may be common to all, and in the second part describe only those which relate exclusively to "rope boring."

To fulfil the requirements of percussive boring the borer must be made sufficiently stiff; it must be raised by some mechanical arrangements so that it can in falling through its own weight attack the ground. It must be gradually rotated, in order to strike the ground after every blow in a fresh place, and that the bore-hole may be perfectly cylindrical. It must admit of being lengthened and shortened with ease, and without much loss of time. When unavoidable hindrances and obstacles occur they should be safely and readily removed; and, lastly, the broken ground must be raised from the bottom of the bore-hole. In accordance with these requirements we shall consider in succession—

I.—Preliminary precautions and arrangements.

II.—The different tools and apparatus for boring.

III.—The operation of boring itself.

IV.—The removal of hindrances which may happen during the boring operations.

Royal School of Mines.

LECTURES ON MINERALOGY—No. III.

[BY OUR SPECIAL REPORTER.]

The subject of the third lecture of the course delivered to working men by Prof. SMYTH, F.R.S., was "THE GEOMETRICAL FORMS OF INORGANIC NATURE." One of the most interesting, and at the same time practically important, matters connected with mineralogy was that of the form in which they presented themselves when being placed under favourable circumstances, they have been allowed to crystallise. Many hundred years have passed away since the Greeks and Romans, passing at times over some of the lofty chains of mountains in the South of Europe, brought away with them examples of a well-known substance (quartz, or rock crystal) in a crystallised condition, and they called it *crystallus*, from a word signifying that it had a strong resemblance to ice. The term reminds one of the designation which our gallant countrymen have recently applied to the sea of ice in a northern region—the "Polar crystalline Sea"—and in fact it is derived from the same ancient word. The ancients had considerable difficulty to explain to themselves how it happened that when this substance so closely resembling ice was brought into the plains it did not melt and thaw itself. They assumed that the winter frosts of those lofty heights were sufficiently intense as to freeze the ice so hard that it was not able to thaw even in the warmer plains. Something akin to this notion is to be found very commonly at the present day in this and other countries. Thus the workmen in the Yorkshire lead mines have a certain spar which they call water spar, because they believe it has been deposited by water, or is congealed water. To a certain extent they are right, and facts are with them, for it is generally held that the majority of these substances were introduced by the means of water, but the water has now disappeared, and the substances have been left behind, so that they can by no means be considered as congealed water.

Not long ago an eminent philosopher, Prof. Graham, was led by a series of speculations and experiments, carried out during a great number of years, to group all the various inorganic substances which in a certain degree of purity into two classes. To the one class he gave the name of "crystalloids," because they all, under favourable circumstances, formed themselves into definite shapes, connected with a definite internal structure, or, in other words, were capable of crystallisation. The other and comparatively small class he termed "colloids." They possess more or less a jelly-like character, and existed at one period in the course of their history in a condition, afterwards hardening it may be, but never assuming a crystalline form. The property of crystallisation is not confined to natural minerals, but passes beyond, and extends through the whole inorganic kingdom, for when we pass to those multifarious groupings of elements which the chemist is able to put together in his laboratory we find that precisely the same laws of crystallisation hold good.

When we commence to look into the various forms which minerals assume we are almost disheartened by observing the enormous number of forms they present. Is it not wonderful that the ancients looking not very closely into these matters, through being struck with the regularity of such forms as those of quartz, emerald, &c., should have failed to observe the grouping and laws of the forms? This was reserved for very recent times, when at the end of the last century two or three men of leading intelligence threw a sudden light upon the subject, in the full blaze of which we may now be said to be living, though very much as regards the origin of the minerals, their mode of occurrence, their structure, &c., is still mysterious and unknown. If we take such a substance as calcite, or calcareous spar, we shall find it occurs in nature in crystalline form, about a thousand different shapes; how, then, is it possible to remember these shapes, and recognise the mineral? It is found that they are all related, that there is a certain law which binds them all together, and certain limits beyond which they do not pass; and this is true from whatever place or position the substance is obtained. Hence we arrive at this result of great practical importance, as well as interest, that if we are once acquainted with the law of derivation, and the connection of one of these forms with another, we may distinguish one substance from another merely by the form in which it crystallises. It was, therefore, sought to ascertain the best method of grouping all these forms. The first law was to make use of the internal structure of the mineral as shown by its cleavage. This property of cleavage is beautifully shown in Iceland spar, a variety of calcareous spar, which is a moderately hard but brittle substance, and when struck with a hammer readily breaks into fragments of regular form, bounded by perfectly smooth bright planes, and all of them parallel to the planes of the regular shaped mass with which we start. Many other substances exhibit this property of cleavage, but with very varying degrees of perfection and facility. It was thought by some of these early authors that a convenient method of grouping minerals would be to test them by cleaving, so as to obtain a certain primary or elementary form, and that by these primary forms they were to be classed. After a very few years it was found that this method did not hold good, and other methods were adopted. The best of these is that of assuming that passing through the centre of the crystal as a set of three imaginary axes, the faces of the crystal cutting these axes at different distances from the centre.

But perfect and complete crystals are exceptions in nature; portions of crystals and small ones are far more plentiful. When the substance appears in this distinct form it is said to be "crystallised." Cubes of iron pyrites may sometimes be met with very perfect, and fluor spar is a good instance of cubic crystallisation in a state nearly perfect. As a rule it is substances which have crystallised in the midst of soft material that are most regular and completely formed. We can pass from examples such as these to materials in which we do not see the separate crystals so distinctly, but with a lens and with care they can be made out; such, for example, is porphyritic rock, of which we have fine examples in the pavement of our London streets in parts. As an example of a magnificent porphyry the lecturer alluded to the material of which the sarcophagus of the Duke of Wellington in St. Paul's is made. From this we may pass to various kinds of marble, such as statuary marble, where we have a large number of shining facets, but cannot make out very distinctly the individual crystals, and yet what we do see leads us to believe that under more favourable circumstances large and well developed crystals would have been formed. And beyond this we can pass to still more minute aggregates in some limestones. All these substances in which the individual crystals are not fully and distinctly developed are said to be "crystallised." Then there is still another class, containing substances which show no tendency to crystallise, and are, therefore, called "amorphous," meaning that they have no distinct form of their own, and are devoid of the sort of internal structure which characterises crystallised and crystalline substances. Opal and turquoise are examples of the amorphous class.

One of the first to throw light on this science of mineralogy was a French ecclesiastic, named Haüy, and his system of dividing and grouping minerals was published in all languages. After him came Weiss, in Berlin, and Mohs, in Jena, each of whom had his school of followers. With regard to the system of axes, we may have with three axes five different systems—1. All three axes equal, intersecting at right angles.—2. Two equal and one unequal, all intersecting at right angles.—3. All unequal, and intersecting at right angles.—4. Unequal, and one inclined to the plane of the other two.—5. Unequal, and intersecting at different angles, so that there is no right angle.—6. Another system is added, in which there are three equal axes, intersecting at angles of 60°, and one unequal, cutting them at right angles. Iron pyrites and the diamond are examples of mineral falling into the first system, barytes into the third, sulphate of copper into the fifth, and quartz and calc spar into the last. [The lecturer then, by means of models, drawings,

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergstrath, Dr. von GRODZICK, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

† The Lectures Nos. VI. to XIII., both inclusive, treat of Faults, their mode of occurrence, and the system to be adopted in following the seams or veins affected by them; but, as the illustrations are far too numerous to be admissible to a newspaper, and as without them the lectures themselves would be utterly unintelligible, we are unable to publish them.

‡ The connection of the present surface appearance of this country with its former geological history was admirably elucidated by Prof. Ramsay in a series of lectures given some years ago to working men at the School of Mines, London.

actual specimens, further illustrated the details of the systems of relations of different forms. The value of this examination of crystals need scarcely be insisted upon. As a point in general philosophy it is most interesting to find that all these inorganic materials obey a set of most definite laws: whether it forms a glass of solution on our table, or whether we descend into the depths of the mine, or rise to the heights of the mountains, we shall always find the same laws acting. The substances appear to follow precisely what is the set of figures they may take on themselves, and within what limits they may vary; and in addition to that external form which they exhibit so plainly to our eyes, in their interior, in the midst of the composition of which they are built up, they carry that definite structure which is allowed to that particular substance so completely throughout the mass that it defies human powers to follow them up, except by the process of thought. And thus we are led up by this study to the long disputed question as to the infinite divisibility or indivisibility of matter; and we see how, in addition to its important practical bearings, the examination of crystals from a philosophical point of view is a study which may well engage the best powers of the highest intellects.

GEOLOGICAL SOCIETY OF LONDON.

At the annual general meeting, on Feb. 16 (Professor P. MARTIN DUNCAN, M.B., F.R.S., President, in the chair), the Wollaston Gold Medal was presented to Mr. ROBERT MALLER, C.E., F.R.S., F.G.S., in recognition of the results of at least forty years of sedulous labour in some of the most important and difficult problems in geology; the balance of the proceeds of the Wollaston Donation Fund to Mr. ROBERT ETHERIDGE, jun., F.G.S., as testimony of appreciation of his industry and accuracy as a Palaeontologist.—The President next handed the Murchison Medal to Mr. Warrington W. Smyth for his transmission to the Rev. WM. BRANWHITE CLARKE, M.A., F.R.S., F.G.S., of Sydney, Australia, in recognition of his remarkable services in the investigation of the older rocks of New South Wales, services which have led to a correct knowledge of the succession of the formations in that great country, and which have been of great value to the community; the balance of the proceeds of the Murchison Geological Fund was presented to the Rev. J. F. BLAKE, M.A., F.G.S., in appreciation of the excellence of the Geological and Palaeontological services which he has rendered to science during the last few years.—The President next handed to Prof. Ramsay, F.R.S., the Lyell Medal and part of the Lyell Fund, for transmission to Mr. JAMES HECTOR, M.D., F.R.S., director of the Geological Survey of New Zealand, in recognition of his long and valued services in Geology and Palaeontology both in British North America and in New Zealand. The balance of the proceeds of the Lyell Fund was handed to the Rev. Thomas Wiltshire, M.A., F.L.S., F.G.S., for transmission to Mr. WILLIAM PENGELEY, F.R.S., F.G.S., as evidence of the thorough appreciation of his long and successful labours in the geology of Devonshire, and his untiring devotion to the great task of extending scientific knowledge relating to the antiquity of man.—The President then handed the Bigsby Medal to Mr. Hulke, F.R.S., F.G.S., for transmission to Prof. O. C. MARSH, F.G.S., of Yale College, Connecticut, U.S.—the first medal given to one who has laboured long and successfully in the field of American geology.

Feb. 21.—Prof. P. MARTIN DUNCAN, M.B., F.R.S. (President), in the chair.

Samuel Arthur Adamson, Caledonian-street, Leeds; William Mason Cole, St. Helen's-street, Ipswich; Thomas Floyd, Sussex House, Rowland-road, South Norwood; William Stukeley Gresley, Overseal, Ashby-de-la-Zouch; Edward Pritchard, Assoc. Inst. C.E., Church-street, Warwick; Joseph Pryor, Mine Agent of New Consols Arsenic and Silver Works, Callington, Cornwall; and John G. William Thomas, Colliery Manager, Hoor Cottage, Pombrey, Carmarthenshire, were elected Fellows of the Society.—William B. Colman, Barrister-at-law, Hyde Park Gardens, and of Belach, Aberdeenshire; William James Grimshaw, Mining Engineer, of Wellfield, Stand, Whitefield, near Manchester; and Alexander Ross, Union-street, Inverness, were proposed as Fellows of the Society.—The Rev. Ebenezer Davies, of the Green Oaks, Talbot-street, Southport; William Davies, Antill-road, Bow-road; and Henry Davis Hoskold, Mining Engineer, Almarra, Penzance, will be balloted for as Fellows; and George Garves Esq., Professor of Mineralogy in the Sheffield School of Science, 141 College, Newhaven, Connecticut; M. A. L. O. Desclouzeaux, of Paris; Prof. E. Renevier, of Lausanne; and Count Gaston de Saporta, of Aix en Provence, as Foreign Correspondents of the Society.

The following communications were read:—

1.—“On possible displacements of the Earth's Axis of Figure produced by elevations and depressions of her surface.” By the Rev. J. F. Twiss, M.A., Professor of Mathematics in the Staff College. Communicated by John Evans, F.R.S., F.G.S.

2.—“Note on a specimen of *Diploxylozylon*, from the Coal Formation of Nova Scotia.” By J. W. Dawson, LL.D., F.R.S., F.G.S.

The author described the occurrence in coal-measure sandstone at the South Joggins of an erect stump of a Sigillarian tree, 12 ft. in length; it originated in a coaly seam 6 in. thick, and terminated below in spreading roots; below the coal seam was an underclay, 3 ft. 4 in. thick, separating it from an underlying seam of coarse coal. The stem, which tapered from about 2½ ft. in diameter near the base to 1½ ft. at the broken end, was a sandstone cast, and exhibited an internal axis about 2 in. in diameter, consisting of a central pith cylinder, replaced by sandstone, about 2.5 in. in diameter, and of two concentric coats of scalariform tissue, the inner one 1.25 in. in thickness, the outer constituting the remainder of the axis. The scalariform tissue of the latter was radially arranged, with the individual cells quadrangular in cross section. A few small radiating spines, partially filled with pyrites, obscurely represented the medullary rays, which were but feebly developed; the radiating bundles, passing to the leaves, ran nearly horizontally, but their structure was very imperfectly preserved. The cross section when weathered showed about 20 concentric rings, but these under the microscope appeared rather to be bands of compressed tissue than true lines of growth. The thick inner bark was replaced by sandstone, and the outer bark represented by structureless coal. On a small portion of one of the roots the author traced the remains of stigmarioid markings. From the above characters the author identified this tree with *Diploxylozylon* of Corda, and stated that it was the first well characterised example of this type of Sigillarians hitherto found in Nova Scotia. The author compared the structure of this stem with that of other Sigillarians, and remarked that it seemed to come within the limits of the genus *Sigillaria*, but to belong to a low type of that genus approaching *Lepidodendron* in structure; those of the type of *S. elegans*, *S. spinulosa*, Renault, being higher in organisation, and leading towards the still more elevated type described by him in 1870. He further discussed the supposed alliance of these trees with Gymnosperms, and the probability of the fruits known as *Trigonocarpa*, being those of *Sigillaria*, and expressed the opinion that the known facts tend to show that there may be included in the genus *Sigillaria*, originally founded, species widely differing in organisation, and all Gymnosperms and Acrogenous rank.

A series of shells drilled by carnivorous mollusca, from the Crag of Norfolk and Suffolk, was exhibited by E. Charlesworth, F.G.S.

The next meeting of the society will be held on March 7, when the following communications will be read:—1. “On the vertebral column and pelvic bone of *Plesiosaurus Ewansi* (Seeley), from the Oxford Clay of St. Neot's, in the Woodwardian Museum of the University of Cambridge.” By Prof. H. G. Seeley, F.L.S., F.G.S.—2. “Supplementary Notes on Fauna of the Cambridge Greensand.” By A. J. Jukes-Brown, F.G.S.—3. “On the Beds between the Gault and Upper Chalk, near Folkestone.” By F. G. Hilton Price, F.G.S.

MANCHESTER GEOLOGICAL SOCIETY.

The monthly meeting of members was held on Tuesday, at the Literary and Philosophical Society.—Prof. Boyd Dawkins (the President) in the chair.—Mr. A. W. Waters read an extract from a paper by M. Ernest van den Broeck, in which attention was called to the frequent alteration of calcareous fossiliferous to unfossiliferous beds by the infiltration of water, the acid of which dissolves out the calcareous matter.—Mr. Dickinson, her Majesty's Inspector of Mines

for the district, said he observed by the last number of the Transactions of the Geological Society of London that Mr. D. C. Davies, F.G.S., of Oswestry, had communicated another and a very elaborate paper on the position of the coal field at Icton Rhyn, Shropshire. Gentlemen would recollect that some time ago the subject was brought under the notice of the Manchester Geological Society in a paper, under the title of “Coal seams in the Permian.” Mr. Davies, in his more recent paper, adhered to the views he formerly expressed—that the coal seams described were situated in the Permian. He (Mr. Davies) went into great detail, and his paper was accompanied by some exceedingly useful sections, but he had taken as his datum line the spirorbis limestone. To a great extent the sections were correctly tabulated, but the Icton Rhyn section was, he (Mr. Dickinson) had no hesitation in saying, incorrectly placed. He regretted that at the meeting in London at which Mr. Davies's paper was read his conclusions seemed to have gone without question. The Icton Rhyn coal, so far from being situated in the Permian, was simply the lower portion of the upper coal field of North Staffordshire, which had no position in the North Wales field.—In a brief discussion which followed, the President said it was a valuable thing to have Mr. Dickinson's opinion upon this point. The spirorbis was a fossil widely spread in the coal measures, and the fact of its being found in any given strata would not fix the age of the strata with any great precision.—The remainder of the meeting was occupied with a paper communicated by Mr. G. H. Kinahan, of H. M.'s Geological Survey, on “Irish Drifts,” upon which there was some interesting discussion.

SUDDEN DISCHARGES OF FIRE-DAMP FROM THE FLOORS OF COLLIERIES.

At the Midland Institute of Mining Engineers' monthly meeting, held at Barnsley, a very interesting discussion took place on a paper prepared by Mr. Wilson, of the Oaks Colliery, and Mr. Miller, of Stafford Main, “On a Sudden and Heavy Discharge of Gas from the Floor of the New Oaks Colliery.” The paper describes an outburst such as has on some few occasions taken place in the district, and of which mining engineers have yet much to learn. The discharge took place on Aug. 30 last, when the intake current was reversed on the outbye side of a bank, and about the same time the safety-lamps at the bottom of the upcast shaft were fired or extinguished by the gas, though a current of return air, equal to 140,000 cubic feet per minute was passing at the time in an area of 104 ft. The safety-lamps, which were about 600 yards from where the outburst took place, were the first and only safety-lamps which the return air had to pass at that particular time. The discharge caused a large fracture in the floor in a district where the ventilation had hitherto been such as to keep all the places clear and free from gas, and then suddenly a body of return air from the same district, measuring 10,000 cubic feet per minute, became so charged with fire-damp that after travelling 600 yards, and even after mixing with four more currents of return air, equal to about 140,000 cubic feet per minute, was still foul enough to fire and extinguish the safety-lamps. On the morning of the occurrence the deputies went their rounds as usual, but did not see anything unusual except the roof of No. 208 bank veighing, when the colliers were told to leave it. The deputies then attempted to go by the pack-road in the fast end of the 208 bank, when one of them felt the floor rise under his feet, when they all retreated. In one level the air was reversed, when an alarm of “gas” was raised by the men at the bottom of the upcast. At the same time one of the hangers-on at the upcast pit had three safety-lamps on the east side of the shaft, two being Clanny's, each with a Mueseler chimney, and an ordinary Clanny without a chimney, all of them hanging on a wire across the place, which was about 18 ft. wide, about 6 ft. from the ground, where the total height was about 15 ft. The two lamps with chimneys were suddenly extinguished, and the ordinary Clanny lamp was firing, and at a red heat, until the man got it down on the floor and put it out, as he did also all the other lamps on the other side of the pit bottom. One overman who was in the box-hole at the bottom of the pit making some entries when an alarm was given that something was wrong in what was called Bird's level, when he went to the return doors, and immediately on going through the second one his lamp—a Clanny with a Mueseler chimney—was extinguished. He then returned to the bottom of the downcast, put out all the naked lights, and sent deputies to bring the men out of the workings.

An examination was then made by the manager, Mr. Wilson, along with the deputies. At the 208 bank gas was found near to the face, and could then proceed no further. On going to the return, which came from the banks in what is known as Bird's Level, they were stopped by the gas. In the evening the party managed to get on the gate of No. 208 bank, and by keeping the safety-lamps down towards the floor they got under the gas. The party then went round by the next gate on the intake side to No. 280 bank, which was quite clear of gas, but the pack against the fast side of No. 208 bank was thrust up by the bottom from 6 ft. high to a height of 2 ft., and that road was stopped. After driving a road from No. 280 to No. 208 bank in the coal the gas was found to be giving off strongly from the bottom in a line for some distance. Fourteen props in No. 208 bank were thrust out and loosened by the action of the bottom, and the bank face over the timber was standing. The floor was lifted up until a height of 6 ft. was reduced to that of a creeping road. The seat-stone, a hard thill, was thrust up on end, and in long massive lumps, and the small dust from it by the force of the gas was tightly blown into all the holes and crevices of the packs and chocks. Mr. Miller, of Stafford Main, who has had some experience of sudden outbursts at his own place, and has paid a good deal of attention to the subject, visited the Oaks a few days after the outburst, which was no great wonder to him, whilst Mr. Wilson could scarcely credit the fact that such a terrible sort of earthquake could occur down a pit, but was taught by the occurrence that a sudden outburst of gas had come from the floor, and but for the safety-lamps might have told a much worse tale, and in all probability the cause of the disaster would not have been discovered. Now there is some reason to think, or perhaps to fear, we are told in the paper, that many mining engineers and managers do not know of, nor believe in, this one source of danger, for one of Her Majesty's Inspectors of Mines, when such a thing as a sudden outburst of gas was suggested as the possible cause of a heavy explosion in Yorkshire about a year ago, called it a “sort of nonsense which he did not wish to hear of again.” But Mons. A. Habets, secretary to the Liège Association of Engineers, in a paper read by him before the Congress at Brussels, speaks of “those instantaneous disengagements of fire-damp which appear but little known outside the Belgian coal field, and which are the greatest causes of danger presented by the working of coal in certain collieries in our country.” But the facts given as to the outburst at the Oaks is of grave importance, and it would be well if our mining scientists would take it up, with a view to find a means of preventing or of dealing with such dangerous occurrences. Since the last outburst at Stafford Main, a notice of which appeared in the Journal, some interesting experiments were made which are worthy of notice. In a district which seemed to the manager the next liable to test again the efficiency of the safety-lamps and of discipline, a bore-hole was put down to 7½ ft., but no gas was given off until a hard floor of 7½ yards thick was bored through, and since boring to 7½ ft. gas has been continually given off. By means of a pressure-valve fixed on the bore-hole the gas has been shown to exert a pressure of 135 lbs. to the square inch. In such a case, and with a section of floor such as at Stafford, it seems that the floor is, as it were, an immense boiler-plate, with a pressure underneath, as above stated, till a hole is drilled in the softer and gas-bearing measures to allow of the discharge of the gas. The bore-hole actually prevented another outburst of gas at the Stafford Main Colliery, two having occurred in the next panel of banks, and then this part was tapped with a bore-hole before the force proceeded further.

The following sections of the seam of coal at the Oaks Colliery, with roof and floor bored to a depth of 31 ft., will make the subject matter more complete. Above the coal head is a bind intermixed with iron bands for 15 yards, so far as is proved. Then there is—Brat, shale, or cannel coal, 2 in.; day bed or top softs, 1 ft.; softs, 1 ft. 4 in.; clay seam dirt, 2 in.; clay seam, 10½ in.; hard, 3 ft. 4 in.;

bottom softs, 2 ft. 2 in.—9 ft. 0½ in. Hard thill, gas given off, 4 ft.; strong stone, 9 ft.; a soft piece, gas given off, 3 in.; a very strong stone with partings, 18 ft.; a very soft parting mixed with coal, gas given off—no further proven.

ROCK-BORING MACHINES.

At the meeting of the Mining Institute of Cornwall, held at Redruth, on Saturday (the President, Dr. LE NEVE FOSTER, in the chair), a paper on the Barrow Rock-Drill was read by Mr. George Seymour, jun., A.R.S.M.:—Although the idea of rock-boring by machinery in metalliferous mines is by no means a novel one, it must be admitted that of mechanical problems it is one of those which have hitherto been found the most difficult of practical solution, for in none, perhaps, has a greater amount of mechanical skill and ingenuity been brought to bear. The names of many of these machines are familiar to the public, and the Darlington and Doering may be mentioned as having attracted most attention in Cornwall. No trial has, however, been followed with more interest than that which has now been progressing successfully for the last eight months at the principal mine in the county, and the deep and general attention with which all who are engaged in mining operations have followed the steady and practical success of the Barrow drill at Dolcoath is, in itself, sufficient to prove that they are actuated by more than mere curiosity, and that as soon as the mining world is satisfied that this, or some similar machine, can be worked with advantage and economy, their final adoption as a recognised instrument in mining operations will be merely a question of time. So many machines have, however, been advertised as having overcome every obstacle, and fulfilled every condition of success, only to be buried, after a brief series of trials, in a well merited oblivion, that mine managers may well be pardoned if they await the results of an extended trial, before venturing on what has proved hitherto, in almost every case, little better than a tedious and vexatious experiment. The very fact, however, that so very few of these machines have ever made their way into Cornwall is sufficient proof that their employment has never given much satisfaction to practical miners, whilst of those which have ventured on a genuine trial in Cornish mines, none have so far ever managed to acquire a permanent feeling in the county. Essential qualifications in a machine drill are simplicity of construction, portability, and economy in working; the importance of the first condition is sufficiently obvious. Any machine which earns a recognised place in mining operations, by passing beyond the domain of experiments, will have to be worked by the miners themselves, who, however skilled in breaking ground, cannot be fairly expected to master complicated mechanical details. The less the number of parts (especially moving parts) the less the risk of breakage or disarrangement, either of which in most cases entail the necessity of sending the machine up to grass to be repaired, and consequent loss of time. The second consideration, the portability and handiness of the drill, cannot be overrated, and the impossibility of combining this condition with efficiency has alone proved sufficient to disqualify many machines for mining purposes. A heavy machine of this class could not be used in sinking a vertical shaft or winze without being removed by cumbersome and expensive appliances whenever it was necessary to fire, whilst in inclined shafts or winzes it would entail in addition the laying down of some sort of skip-road, and its use in any description of stopping would be an almost absolute impossibility. It has been urged in favour of the larger drills that three or four borers are at work simultaneously, but there is no reason why three or four drills like the “Barrow” should not be put to work in the same space, for no greater, if, indeed, so great an outlay. With regard to the question of economy in times like the present, when every other consideration becomes subordinate to cost, this is of great importance. Not only must the machine require the services of the smallest possible number of men, but the expenditure of motive power, and consequently of fuel, &c., must be reduced to a minimum; and further, no machine whose prime cost is exorbitant can ever expect to come into very general use. The Barrow rock-drill has now been working for over eight months in the 314 fm. level, west of old sump shaft at Dolcoath, in ground for which a price of 25s. per fathom was paid for hand labour previous to the machine being put to work. The patentees of the machine drove the end during their six months' contract, now expired, at the same price per fathom, receiving, however, a premium of 16 per cent. on driving 3 fms., or double the distance ordinarily accomplished by hand labour, and estimated at 9 ft. per month. The Barrow drill having driven at the average rate of over 5 fms. a month during the term of their contract, the patentees have had no difficulty in securing the premium offered. The present trial has been pronounced unprecedentedly successful by all those who have seen the drill at work, including some of the leading mining authorities in Cornwall; its light weight and consequent portability, the great facility with which it can be brought to bear on any point in the back, end, walls, or floor of the level, the small space it occupies, and the extreme simplicity of the machine and its accessories being, as pointed out, considerations of the highest practical importance. The work actually performed by the Barrow drill at Dolcoath was 30 fathoms 3 feet 9 inches in six months, while in the 302 fathom level, exactly over that at which the machine is at work, and in ground of precisely similar hardness, the distance driven by hand labour was 30 fms. 3 ft. 2 in. in twenty-two months, or a monthly average of 1 fm. 2 ft. 4 in.; the monthly average of the machine being 5 fms. 7½ in., showing that the latter has driven regularly nearly four times as fast as is practicable by hand labour. The relative cost of driving by hand and with the machine, the prices formerly paid for hand labour being 28s. 5s. 3d. per fathom, and the cost of driving by the machine 20s. 18s. for one fathom, is 7s. 7s. 3d., or 25 per cent. in favour of the drill. A collateral, but by no means unimportant, average of the boring machine is the improvement in the ventilation caused by the current of the compressed air escaping from the exhaust of the machine, and the lowering of the temperature on its expansion. This is noticeably the case in the 314 fm. level at Dolcoath, where the difference in the temperature when the machine is idle and when at work is very marked. The rapidity also with which permanent ventilation can be more promptly secured by putting down a winze or boring through a piece of ground, so as to establish a current of air, should not be overlooked. If these considerations conclusively prove that ground can be more cheaply driven at a high speed by machine than by hand labour the success of the Barrow drill becomes an accomplished fact, and another triumph added to the long list of those achieved by mechanical science.

The President, in opening the discussion, said it was with pleasure he noticed that these drills performed the work much quicker than hand labour. At a meeting at the Polytechnic, a year and a half ago, Major Beaumont speaking of rock-drills said they could get speed if they wanted it, but if they got speed they would have to pay for it. He (Major Beaumont) did not believe it possible for rock-drills to give speed without their having to pay greater prices for the results than they were now paying, but he (Dr. Foster) was very pleased to find that speed was to be attained together with great economy.

Mr. J. L. BOLDEN wanted to know how much work the Barrow machine at Dolcoath had done since the patentees had left?

Capt. JOSIAH THOMAS, of Dolcoath, said the patentees left two months ago. The first month of that time they only worked the machine a fortnight. The second month they had worked nearly the full time, and had driven nearly 5 fathoms. Had the machine been at work the whole of the time much more than 5 fathoms would have been accomplished.

Mr. J. H. COLLINS said as the mines were sunk deeper and deeper so they would have to provide artificial means of ventilation, and he wanted to know how far these machines would have the effect of improving the temperature by lowering it.—Capt. JOSIAH THOMAS was not quite prepared to state the exact figures, but believed the temperature was reduced 10° or 15°.

Capt. TREGAY, asked by the Chairman to give his experience on boring machines, said he believed he had one which would surpass the Barrow, but in consequence of Mr. Basset's withdrawal of his offer in giving the Beaumont drill a trial, he was obliged to cease his experiments.

Mr. JOHN THOMAS asked if any experiment had been made in

commenced. It is a sane, matterly lode of about 4 varas (11 ft.) in width, and at 20 varas (53 ft.) from surface appears to have yielded pretty good ore even at so shallow a depth. If we allow an underlie of only 2 in. in a vará to this lode it would be sufficient to place it 3 to 4 varas (8 to 11 ft.) east of our San Miguel level south. As already stated, I do not think it would be acting rightly to leave so fine a lode unworked. It is, however, so small, and the ore is so poor, that I will not do this next week. Capt. Skeiws has set the ground to six men, and we propose to divide the 8 varas (17 to 23 ft.) unless anything should transpire hereafter to cause us to drive a greater or shorter distance. San Guillermo continues to look much the same, and is what is termed here a good azogue lode; the ore being worth 10 to 12 guineas per ton (10 to 12 guineas per ton), and the others 5 to 9 marcs (5 to 9 guineas per ton).

to 200,000 bushels per day. Mr. Hay, Jan. 24: Mine of Jo de Maria, Jose. Many of our men have gone to work in a neighbouring mine, consequently at the two last sales less ore was offered for sale. However, for to-morrow a better sale is expected. The buscon sales for the last four weeks to Jan. 15 amounted to \$2914. New Concern: A. Diamante and Mines of Buenos Ayres, San Antonio de Ovejuna, El Diamante, and San Cayetano de la Ovejuna: A buscon has gone to work on the Diamante mine, and the water in the shaft of San Cayetano de la Ovejuna has gone down in the last four weeks 2-05 metres, the total decrease being 7½ metres on Jan. 29. We have driven in the end of Los Angeles during the week ending last Saturday 3 metres: total distance from the shaft, 55.89 metres. Since we have resumed the work in this mine the appearance of the rock has improved a little: vinstaff has begun to show itself again, and the other strata are more regular. The water has begun to about ½ metre. Water has also begun to come away from the freute, whereas hitherto it only came from a point about 20 metres east of the end. The Ave Maria and the old working a little higher up the mountain have got drained during last week: a buscon will probably go to work in this place as soon as a weak spot has been found. The buscon will work on the workings of San Antonio we have received during the last week about 23 cargas of ore. We have parts of San Ignacio having December 42 cargas, the average assay of which has been 1.23 mace of silver per mouton, with 296 grains of gold per mace. In Santa Elodia the rock is very hard, and the powder does not work well at the place where we are cutting down the level. However, we shall soon get over this difficulty, and in the meanwhile the buscon will work on the workings of San Antonio. As the parts of San Ignacio have become dangerous we have had to timber the weak places, and soon we shall resume work in that continuation of the adit.

mine work in that old subdivision of the mine.

The 40, west of San Felipe's shaft, is large and regular, and contains spots of lead ore. The lode in the 29, west of this shaft, yield $\frac{1}{2}$ ton of ore per fathom. In the 25, west of Abercrombie's shaft, the value of the lode has a little fallen off, it being now worth $\frac{3}{4}$ ton per fathom. The 40, in the same direction, is unproductive. The 50, east of La Magdalena crosscut, will shortly be communicated with Abercrombie's shaft. In the same level, below the 40, small, and of no value. The 60, east of San Enrique's shaft, is still open, stopping down, with a few tons per fathom. The lode at the bottom of Taylor's shaft, continues without improvement. The same level west has a little fallen off in value, but the lode is still large and open, and worth 1 ton or per fathom. In the 85, west of San Adriano's shaft, the lode is often disturbed by small cross courses, but is generally productive; present value $\frac{1}{2}$ ton per fm. The lode has not yet been intersected in the 60, east of San Victor's shaft. In the 70, west of the same shaft, the lode is getting into more settled ground. The 50, east of Crosby's shaft, is suspended for the present, and the men put to sink a winze in the level above. The 50, east of Juid's, has again become pro-ductive, and is worth $\frac{1}{2}$ ton of ore per fathom. The 70, west of the same shaft, contained good stones of ore a few days since, but has again become poor. The 50, east of Juid's cross cut, is being driven off the level, and the grade is being raised, so as to strike the dipping down the north side to prove if there is any part of the lode standing in that position. When Abercrombie's shaft has reached the proper depth for a 50 fm. level. The sinking of Sanchez' winze below the 25 is resumed, and the lode produces $\frac{1}{2}$ ton of ore per fathom. Horna's winze, below the 60, yields good stones o ore. Depozo's winze, sinking below the same level, is poor, and hard for sinking. The lode in Torrente's winze, below the 40, is regular, and contains a few spots of lead ore. Below the 40, below the 50, below the 60, below the 70, below the 80, is being sunk east of San Juan's shaft, valued at $\frac{1}{2}$ ton per fathom.

being sunk east of San Jutes shaft; valued at $\frac{1}{2}$ ton per fathom. The Adria shaft, located on the level of the Tomita shaft, is wide, and contains spots of ore. In the 100, east of Warner's shaft, the lode has fallen off in value. The same level west yields $\frac{1}{2}$ ton of ore per fathom. The lode in the 105, west of Peill's, has improved to 1 ton of ore per fathom. The 90, west of the same shaft, continues to open up good ground, 1, worth 2 tons per fathom. In the 65, west of Peill's, the lode is small and poor. The lode in the 105, east of Peill's, is compact, and is yielding 1 ton of ore per fathom. The 90, east of San Francisco shaft, is also yielding 1 ton per fathom. The 75, east of this shaft, is unproductive. The 65 is also unproductive. The 55, east of Peill's shaft, sinking in the 105, progresses well. The lode in No. 216 winze, below the 65, yields 1 ton of ore per fathom. No. 217 winze, below the 55, is going down in a moderately productive lode, worth 1 ton per fathom.—Quintentos Mine: The 90, west of Taylor's shaft, does not contain any ore to value. The lode in the 80, west of the same shaft, is hard and unproductive. The 90 east is without improvement. The 80, east of Adria's shaft, is opening up highly productive ground, worth 3 tons of ore per fathom. The 75, east of this shaft, is also yielding 3 tons of ore per fathom. The ground in the 65, west of the same shaft, is composed of lime and quartz. The lode in the 65, west of San Carlos, is very open, and yields stones of ore. In the 80, west of this shaft, the lode continues hard and unproductive. The same level east is at present of no value. In cross-cutting north we have intersected the main part of the lode at the 65, east of Judd's. The lode in the 45, east of this shaft, is disordered and poor. The 32 cross cut, north of Judd's, continues the same as last reported. Taylor's shaft, sinking below the 65, is also yielding 3 tons of ore per fathom. The lode in the 65, east of the ground in the 65, west of the same shaft, is hard and difficult to sink. The lode in Felipe's winze, below the 65, is worth $\frac{1}{2}$ ton of ore per fathom. Tomas winze, situated west of Taylor's engine shaft, and in advance of the 90 end, yields 2 tons of ore per fathom.

engine, one per fathom. In the 120, driving west of O'Shea's engine shaft, the lode is small, but yields good stones of lead ore; and is worth $\frac{1}{2}$ ton per fathom. The 110, west of Judd's, has slightly improved, and is opening tribute ground worth $1\frac{1}{2}$ ton per fathom. The lode in the 30, east of San Carlos, is split into small branches. In the 40, west of Abercrombie's, the lode is very regular, and composed of quartz and good lumps of lead ore; of the latter the 40, west of Abercrombie's, yields $\frac{1}{2}$ ton per fathom. The 50, west of Judd's, yields $\frac{1}{2}$ ton per fathom. The 60, west of San Pedro's shaft, is opening a good length of valuable ground, and worth 1 ton per fathom. The 70, west of this shaft, yields $\frac{1}{2}$ ton per fathom. In the same level east the lode is worth $\frac{3}{4}$ ton per fath. An improvement has taken place in the 120, east of O'Shea's shaft, being worth $\frac{1}{2}$ ton per fathom. The lode in the 110, east of Addis, is poor, and the ground is not worth opening. In the 100, west of the 90, driving in the same direction, the lode is small, and the ground is not worth opening. In the 80, west of Kennedy's, is poor, and the 90, west of the same shaft, is not worth opening. The lode in the 70, west of the 60, driving in the same direction, is not worth opening. The lode in the 60, west of Lowndes' shaft, yields $\frac{1}{2}$ ton per fathom; this level is getting near the ore ground in the level above. The same end east contains a good branch of lead; worth $\frac{3}{4}$ ton of ore per fathom. A branch of the cross-course has again disordered the lode in the 50 east of Carco's. Fair progress is being made in the 80 cross cut, and the lode in the 70, west of San Tomas' shaft. Abercrombie's shaft is being driven down the required depth for the 50, and driving has been commenced towards the lode. San Tomas' shaft below the 70 is being sunk in very hard granite. Serrano's winze below the 30 is poor. The lode in Leon's winze below the 40 has again improved, and is now opening ground worth $1\frac{1}{2}$ ton per fathom.—Los Salidos: The lode in the 130, west of Buenos Amigos shaft, is poor, and the ground is not worth opening. In the 120, west of the 110, driving in the same direction, the lode is small, and the ground is not worth opening. In the 110 fm. level, west of San Carlos shaft, a small cross-course has been met with, which has disordered the lode. The lode in the 130 fm. level, east of Buenos Amigos shaft, is unproductive. In the 130 fm. level, west of Morris's shaft, there is scarcely any lode to trace. In the same level east the lode is large, and yields $\frac{1}{2}$ ton of ore per fathom. The lode in the 120, east of Cox's, is at present disordered, and a cross-course is being opened to meet with good ore again shortly. A rich run of ore ground is being opened by the 110, west of the 100, driving in the same direction. The lode in the 120, west of the 110, driving in the same direction, is present value 4 tons per fathom. The lode in the 45, west of Swaffield's shaft, is small, and of no value. A rich branch of lead has been met with in the 55, west of Palgrave's shaft, worth 3 tons per fathom. The 65, west of this shaft, has fallen off in value. The lode in the same level east is regular, and is opening fairly productive tribute ground, worth 1 ton of ore per fathom. The 65 east yields $\frac{1}{2}$ ton of ore per fathom. The 75, west of the 65, driving in the same direction, is fairly good. Quinta's winze, below the 110, will be holed during the month. The lode in Victoria's winze, below the 25, yields 1 ton of ore per fathom. Alfous's winze, below the 55, has been holed to the 65.

below the shaft, has been traced to the 32nd La Berta. The 50 metre level cross-cut, east of Guillermo shaft, is composed of a vein 1 ft. wide, composed of fluor-sparg, spotted with lead ore. It is quite perpendicular, and cannot at present be traced as belonging to any of the surface lodes. The 50 cross cut, west of Guillermo shaft, is in hard limestone, with divisionary lines of clay. The sinking of San Vicente shaft, on east underlier, is prevented at present by heavy floods. The lode in the bottom is small, composed of fluor-sparg and argillaceous matter. The 30, north of San Vicente shaft, on east underlier, is in broken shale and clay under the lode. The 30 cross cut, which is just completed, is in calcareous sand, passing through the lode. The 30 cross-cut, west of the same shaft, has passed through a small vein, with traces of lead ore. The shallow airt to this shaft will shortly be holed, and when completed will take off the water now going down the shaft. The lode in La Cruz despita ditto north is 3 ft. wide, composed chiefly of silicious shale with a leader or hanging wall 6 in. wide, of good calamine.—Asuncion: The archer of ground in the bottom of the adit are being stopped away, and yield a little ore. A little ore is also being got from the tribute pitches in the old mines. We expect to raise for the month of Feb. 21, Palma. In sinking Taylor's engine shaft to the 190 the lode is worth 4 tons of ore per fathom for the length of the shaft—15 ft. In the 50 cross-cut, on top of Perez shaft, the ground is still hard. There are two or three walls in the end underlying north still poor. Rise No. 165, above the 180 east of Taylor's, is in a lode 4 ft. wide, composed of quartz.—Levels: In the 190 west of Taylor's, on Basto's lode, the lode is producing 14½ ton of ore per fathom. At the 180 the north part of the lode is small, and so far unproductive. In the 170 and 150 fm. levels the lode is 1½ ft. wide, composed of quartz, the latter end producing a good quantity of ore per fathom. In the 130 the lode is 1 ft. wide, composed of flocon and quartz. In the 7 the lode is 8 to 8 in. wide, giving small stones of lead. In the 28 the lode is 6 in. wide, of flocon. At Carvalhal in the 60, west of the cross-cut, the lode is nearly 1 ft. wide, of quartz, and in the 30 the lode is 8 in. wide, composed of lead blende, mung be, and quartz.

LEAD MINING IN SCOTLAND.—It is reported from Orkney that a number of gentlemen have arranged with Mr. Spence, of Pow, to work a lead mine on his property which has been disused for nearly half a century.

The trustees of the Second Issue of Atlantic and Great Western Leased Lines (1873) have received a remittance of between 5000*l.* and 600*l.*, as the last year's dividends on shares in the Shenango and Alleghany Railway held by the trust. They are informed that there is a good prospect of regular dividends in the future from this and the Mercer Mining Company. A small dividend on the bond

The creditors of the Yniscedwyn Iron, Steel, and Coal Company (Limited) are requested to send particulars of their claims to the liquidator by March 25.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, Feb. 24: Produce for eight days, first division of February, 6750 oits.=2615 $\frac{1}{2}$; yield, 4-6 oits. per ton. Profit for the month of January, 6300 $\frac{1}{2}$. Produce small, from large temporary admixture of killas and quartz.

large hemiphragm admixture of knias and quartz.

DON PEDRO.—Jan. 24: The ores extracted have been derived from Nos. 6 and 5 shoots in the back of Alice's. General work has again improved. Stoping ore has been carried on satisfactorily at the horizon of Alice's, and Nos. 5 and 6 shoots improved in quality. The earth driving on No. 5 shoot, which is to cross the old works, is being done with speed and economy; and the small sample-sets are obtained from the said driving. On the 17th we suspended all works on No. 3 shoot, excepting part of No. 4 stopes, as it is required to be continued in consequence of renewing the timber in the 3d cross cut. The incline was

initiated in consequence of renewing the timber in the 35 cross-cut. The incline rise in No. 6 shoot is also continued with a small force. The whim will draw mineral to the 2nd level, two cores a week. The driving, which is driven from the eastern cross-cut at Alice, is continued. The 2nd level is being raised by a tilted No. 22 place, on No. 5 shoot.—Drainage: The water drawn from the mine is the same as when last reported on. Sinking was suspended on the 17th, in consequence of some days dry weather, and the surface water falling off. The force was removed from sinking, and recommenced to open the shaft from the 35 downwards. Sinking was again resumed on the 20th, suspended on the 21st, and on the 22nd it was again resumed. On the 23d, 6 p.m., bucket rod parted in the standing lift, two cutters belonging to toe-pin at Dawson's wheel broke, one toe-pin got out of crank, wheel idle 5½ hours, and the water rose to 3 ft. in the 35 ft. level pit.—Prospective and Running Work: We have removed the smithy to the entrance of the adit level, as it is most convenient for the works. The new canvas has been made ready for work to-day. A force is still employed preparing another. Excavating ground for a loby in the 35 level. The loby is being kept on with a speed, repairing of lobby at the permanent pumping-wheel being continued, and all other running work kept on.

On another pumping work kept on. The 24 ft. drainage: I regret to state that progress continues slow, owing to water from the water a few days, and several breakages have been owing to the machinery. Every 6 ft. sunk adds, of course, more weight to the already overloaded machinery, thus naturally the weakest parts give way on; the other. The deepest point reached is a little over 8 fms. below the 35. I need not say how anxious I am to get down sufficiently so as to commence driving the shaft to drain the best lodes, which cannot at present be worked to advantage. — All the same, I think it will be a long time before we can get down to the level where we are obtaining nearly the entire supply. Nothing new calling for special remark. All works at mine and in connection with the permanent pumping machinery progressing favourably.

— Telegram from Rio, dated Feb. 24. Produce cleaned up (first division of February), 1250 oits.

SAN PEDRO (Chill).—Wm. Phillips, Jan. 17: The shaft sinking below the 150, by four men, is progressing satisfactorily, and I expect to get it down to the 120 by the end of the present month, when we shall at once begin to drive the cross-cut towards the manto, which if we have no accident we shall cut about the end of May, as from the distance of the manto from the shaft in the 150 I estimate that it will be at least 25 metres to drive. I consider that, taking into account the nature of the ground, such satisfactory progress has been made since we began to sink. While driving the cross-cut we shall sink the shaft another 5 metres for a fork for water, and also cut the pit. We should have employed six men in sinking the shaft, but we found that we could not get six to work together in the damp ground. Since last report we have stopped the cross cut towards Cuba, and are instead driving towards the manto Verle, and through that towards Cuba. We have suspended work at the 122 and 110 in order to husband our resources for the 105 and 88 fm. levels. The end driving towards the works, as explained in my last report, is without change. The tribute pit by the side of the works in the 47 will still be at least 100 metres from the 105, and 100 per cent. of the water from the fine sands that have been left by former workers. Everything at surface and underground is working in a satisfactory manner.

RICHMOND.—Telegram from Eureka, Nevada—Hall, London: Week's run, \$40,000; week's produce of refinery, \$30,000.

EBERHARDT AND AURORA.—The directors have received a further shipment of bar silver, valued at present price about 1900%.

ALMADA AND VIRITO.—Telegram from Mr. Breach: Profit for January, \$2000. Remitting \$860 0.

MALABAR.—J. O'Reilly, Dec. 18: Revolution: We had hoped to escape from the immediate vortex of the war, but unfortunately our district has been chosen as the battle-field of the contending forces. On the 29th, 21st, and 22nd inst. we were repeatedly engaged in which we sustained a heavy amount of loss to nearly 12,000 men, the greater number from the foot of the Saint Anna hill, the neighbourhood of Mariquita. The battle proved very obstinate and bloody, but, unfortunately, was indecisive, so that both parties at the date of writing occupy more or less the same ground, and our enterprises are exposed to all the inconveniences resulting from the immediate neighbourhood of two camps. The board will readily understand the extreme difficulty of pursuing any peaceful line of action under these circumstances, but as yet we are happy to say we have remained comparatively unmolested, and the only loss sustained by the mine is the loss of the carry on as well as he can reducing the expenditure to the lowest possible figure. He has carried out my instructions, and I have no doubt we shall be able to cover our expenses in spite of everything. The mine appears to show some tendency to improvement. The blue gravel has again made its appearance, but until we make a clean up it is impossible to say what the result may be.—Clean-Up: I shall continue washing until the troops leave our neighbourhood. We could not safely have been visited at any moment by an armed force. Our ponies have spent much of their time hid away in the forest, and utter demoralisation prevails in our country.

celebration of the 100th anniversary of our country. The drift is about 100 ft. thick, and is now in a distance of 440 ft. from the cross-cut on the 200 ft. level. There is not much change in the said drift since our last report, only the ledge is pitching more to the east, and is running 20° west of north; it is 7 ft. 6 in. thick between the walls, with 1 ft. of solid quartz on the footwall—apparently medium ore. There is on the hanging wall also a streak of quartz 4 in. thick, and some favourable looking bunches of quartz and porphyry between. The said drift is looking well at present for everything that is wanted for a road, and for a raise for ventilation. The north from cross-cut to connect with the O. K. shaft for ventilating the mine and other purposes, is now up 92 ft.—8 ft. driven this week. The ledge is 13 ft. thick between the walls, with streaks and bunches of quartz, and carrying some ore. Nothing done in the drain tunnel this week. There is some good ore in the face and back of the said tunnel, and a number of tons of ore on the dump ready for shipment. The main drift is running in and out the mine is running well. We are somewhat behind in the work on the mine this week on account of the road, the bulk of our miners being opening it.

to the Mine, for our miners being opening it. I got my mine foreman's report for last week. I hope it will not be long ere I have to announce a rich find at the 200. To-day, after opening the road, I got the two long braces sent to the Eschequer Mine, which were wanted to enable them to complete their new hoisting machinery. I have also ordered a pair of 200 ton rollers, which will be ready in about a month (equal to the work of keeping work going on in the 200 and sinking at the same time), to our works, and commence sinking from the 200. The work being done at present is - running the 200 north to get under the ore body on the upper level, and then ventilation from the 200 to the O.K. shaft, and running the Buckeye pit for ore.

EXCHEQUER (Gold and Silver).—Mr. Lewis Chalmers writes, Feb. 5:—The ore extracted is less than usual as I had all hands on the road for two days shovelling snow. It is probably me to get up two wing braces required to finish the galloways-trails, which the stone caught in Saturday afternoon. They go in fine, and the mill will run well should be in place by Saturday, when the cable arse will be ready to run. By putting on the proper number of men I can then double or quadruple our present out-turn of ore. All the levels look well. The mill ought to be running in ten days.

to be running in ten days.

ARGENTINE.—Capt. Coward, Jan. 15: I am pleased to inform you that we have met in the underlie shaft with what appears to be a continuation of the rich course of ore north of shaft. We are now down on it about 1 vara, and have all the shaft in it. The width of the lode we do not know, being only carrying the eastern side of the lode. The 44 south still continues large and kindly.—Surface Work: The rains, which do not show any signs of abatement, have interfered terribly with our surface work, especially in the reduction department.

CONDOS OF CHILL.—J. Secombe, Jan. 16: Since my report of the 2nd inst. there has been no change in the workings to notice excepting in Batter's shaft, where the lode is further improved, and is now worth 25*l*. per fathom, and very favourable for sinking in. This is important, as the bottom level towards it is poor. I am driving the level called 15th on the plan, and also the deepest one of the mine, to communicate with the shaft when down.

PROVIDENCIA AND NEW ROSARIO.—Extracts from Mr. Cumins' letter to the Ministry of the Interior, dated 1905, concerning the mines to be purchased materials for reduction and also to dispatch ore to the hacienda. "Mr. Irujo will incorporate in the course of two or three days a torta of 260 cargas (39 tons), and in a week after will, probably, incorporate another torta of the same size. In the last three weeks we have dressed 97½ cargas (about 14 tons), that raised from San Diego being very fine grade ore, and well worth 15 to 20 marcos per monton (15 to 20 guineas per ton). Nothing has been done to the south part of San Diego

winze since my last report, and with the exception of an occasional hole in bringing up the stone north the same be said about the bottom, and nearly all the ore has, therefore, been broken in carrying the end north. It is very evident that we have in the vicinity of our shaft many more lodes than are visible at surface, and I think the board will recognize the expediency of ascertaining what the lodes may contain, since without doing so we might have the best part of our property unmined. The management have felt very reluctant to expend money in such dead work as cross-cutting, but now perceive the absolute necessity for doing so; and now that we are about to commence on a new scale I think it would be an erroneous policy to leave one of our best lodes untried in order to save an outlay of, perhaps, \$200 or \$300 on a cross-cut. Including the width of San Miguel level north with the western cross-cut we have driven through 7 vertical (about 21 ft. 5 in.) of lode, and we may calculate on 8 to 4 vases (about 5 to 2 vases) of ore per foot of lode. It is not probable that we will find more than 100 vases of what amount of lode we really do possess, but the probability is that it consists of many vases. There is one eastern underlayer on which the Providencia shaft

PEDX-AN-DREA MINES, AND MR. GRANVILLE SHARP.

Sir,—I have read the letter appearing in last week's Journal headed "Pedin-andrea and Mr. Granville Sharp," signed W. Tregay, the questionable contents and offensive tone of which demand of me a reply, although I cannot at this time give any other than a laconic answer, on account of my not being possessed of the full information required to enable me to test the validity of the groundwork on which the statements of Mr. Tregay are based; therefore, my position, as compared to his, cannot but be considered a disadvantageous one. I have, however, sources in view through which to obtain adequate information to serve the purpose stated. What I now intend submitting will consist of two or three questions and a few remarks of a suggestive tendency, which will not, under the circumstances, admit of the charge of irrelevancy being brought against them, however much they may savour of unpleasantness. W. Tregay, no doubt, thinks that his well-studied and laboriously prepared letter will ensure for his conduct full exculpation; but there are, unfortunately for him, not wanting many people, who think very differently, not being allowed by a strict analysis of what has happened through his instrumentality, to believe that he is anything like so entirely free from blame as he labours very hard to make himself out to be, and I am one of such sceptics. It will, however, afford me much satisfaction to be convinced by him that his proceedings do not involve any malversation, which will depend on the nature of his replies to the two or three questions I are in view to put to him.

of course his employers (for 25 years) will be pleased to feel fully assured that he has not in any way culpably misled them, although assuming that they are satisfied on that point, it would be surprising to them to think of the transformation that at once of Peñon-de-la (a call-making mine) into a dividend-paying one, and being in the hands of a man who superintended its operations for a long time, and lost them over 100,000¢, as shown by published statements of the accounts of the company.

The unsatisfactory change of position as between Mr. Tregay and the late Pein-andrea shareholders, which puts him in possession of their mine, makes him already a great gainer, and also ensures for him, according all accounts, a permanently handsome income: suggesting the questions that I intend, as before intimated, to put to him, which, of course, he will take care to answer in such an accurate manner as will be strictly in accordance with the facts of the case, in default of which he will not escape coming into collision with old friends, who cannot but feel, naturally enough, greatly disconcerted on account of what has taken place, and who will not lose the opportunity of placing matters in their true light.

The first question to be asked of Mr. Tregay is, how comes it that after the many years working of Pedn-an-dren at a loss of over £20,000, under his superintendence, the current heavy loss continuing up to the time of its being determined to wind up the affairs of the company (the last six months' operations showing a loss of over £4000,) he is able all at once, after securing the mine, to get good percentage profits out of the very same levels, stopes, and pitches, that before (under his management it is important to bear in mind) were not only so many sources of barren results, but of so much loss as to lead to the bringing about of what has happened, and which has turned out so much to his advantage? The solution of this problem in favour of Mr. Tregay does, indeed, seem to me as it does to many people who have made it the subject of discussion to involve much difficulty, which is not a little increased, unfortunately for Mr. Tregay, by the fact that tin ore does not now sell for so much per ton as it did before he got the mine for himself.

Therefore the next question that cannot escape being asked is—Why could not Pedn-ar-drea Mine, under the direction of the same manager as before as now (Mr. Treggy), have been made to pay, and prevent its being lost to its late legitimate owners, who, on account of baring with praise-worthy spirit and perseverance worked it for the many years before stated, and being minus thereby 100,000L., ought by fair play to be now in possession thereof instead of Mr. W. Treggy, their agent. Anyhow, whatever may be at the bottom of the change of circumstances that has taken place, it must be very appalling to the former shareholders, as before intimated, to see Pedn-ar-drea Mine in the hands of Mr. Treggy (he having acquired it at an "old song" price as compared to its intrinsic value), and to think of its being a dividend mine all at once, and their being "out in the cold!"

It puzzles me to understand how Mr. Tregay can account for Pein-an-dra becoming so suddenly a rich mine. Can it be that the wonderful change that has taken place in Pein-an-dra from poverty to affluence, so to speak, is to be attributed to the solution by Mr. Tregay of the problem for which celebrated alchemists of a remote period of history worked very hard throughout a lifetime—that is to say, to discover the occult chemical law of the transmutation of matter? At all events it has been revealed by Mr. Tregay in the instance under consideration, how to very quickly turn tin into gold. Independently of any of the mysterious processes involved in the profound researches of the scientists of old, who cannot boast of having achieved anything so wonderful.

GRANVILLE SHARP.

Gresham Buildings, London, March 2.

GREEN HURTH.—There is a considerable improvement in the works at this mine. The agent closes his annual report, which is a résumé of the operations at the mine, inside and at the surface, for the last 12 months, thus:—“Notwithstanding that the mine is comparatively poor at present, yet looking to the prospect there is of opening into rich ground both east and west of our present workings, and also in the lower soils. I have no hesitation in saying that I have a better opinion of the mine now than I ever had, even when No. 1 cross vein was most productive. Now, it may not be remembered by all who are cross

GALEN HURTH.—There is a considerable improvement in the rocks at this mine. The agent closes his annual report, which is a résumé of the operations at the mine, inside and at the surface, for the last 12 months, thus:—"Notwithstanding that the mine is comparatively poor at present, yet looking to the prospect there is of passing into rich ground both east and west of our present workings, and also in the lower sills. I have no hesitation in saying that the better opinion of the mine now than I ever had, and which now is more than most productive. Now, it may not be remembered by all who are at present

Birchington, March 2. FERDINAND R. KIRK.

TO THE METAL TRADE.

FOR COPPER, TIN, LEAD, &c., apply to—
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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, MARCH 2, 1877.

IRON.				TIN.			
	£	s. d.	£ s. d.		£	s. d.	£ s. d.
Pig, GMB, f.o.b., Clyde.....	25	15½	2 5 3	English, ingot, f.o.b.....	75	0 0	—
" " Scotch, all No. 1.....	21	17 0	3 15 6	" " bars ".....	75	0 0	—
Bars, Welsh, f.o.b. Wales.....	0	0 0	—	" " refined.....	77	0 0	—
" " in London.....	12	6 16	3 10 0	Australian.....	79	10 0	—
" " Stafford, ".....	6	2 6	8 7 6	Banco.....	73	0 0	—
" " in Tyne or Tees.....	10	10 11	0 0	Straits.....	71	10 0	72 0 0
Swedish, London.....	10	10 11	0 0				
Rails, Welsh, at works.....	5	10 0	—	COPPER.			
Railway chairs.....	—	—	—	Tough cast and ingot.....	75	0 0	77 0 0
" " spikes.....	—	—	—	Best selected.....	78	0 0	79 0 0
Sheets, Staff., in London.....	9	5 0	9 10 0	Sheets and sheathing.....	82	0 0	84 0 0
Plates, Staff., in London.....	9	5 0	—	Flat Bottoms.....	86	0 0	88 0 0
Hoops, Staff.....	7	15 0	8 15 0	Wallaroo.....	79	0 0	—
Nail rods, Staff. in Lon. 7	19 0	8 2 6	—	Burra, or P.C.C.....	77	0 0	—
				Other brands.....	76	0 0	77 0 0
				Chili bars, g.o.b.....	71	10 0	—
STEEL.				PHOSPHOR BRONZE.			
English, spring.....	14	0 0	23 0 0	Bearing metal.....	£112	0 0	—
" " cast.....	25	0 0	45 0 0	Other alloys.....	£120	0 0	140 0 0
Swedish, long.....	17	0 0	—				
" " tag, half.....	17	19 0	18 10 0	BRASS.			
				Wire.....	8½d.	8½d.	—
LEAD.				Tubes.....	10½	—	—
English, pig, common.....	21	5 0	21 10 0	Sheets.....	9	—	—
" " L.B. nominal.....	21	12 6	—				
" " W.B.....	22	5 0	—	Yel. met. sheath. & sheets.....	7½	—	8
" " sheet and bar.....	22	10 0	22 12 6	Nails composition.....	8½	—	9½
" " pipe.....	23	0 0	—				
" " red.....	23	13 0	—	TIN PLATES.*			
" " white.....	24	0 0	24 10 0	per box.			
" " patent shot.....	24	10 0	24 15 0	Charcoal, 1st quality.....	1	2 6	1 3 6
Spanish.....	29	15 0	—	" " 2nd quality.....	1	1 0	1 1 6
				Coke, " 1st quality.....	0	19 6	—
QUICKSILVER.				" " 2nd quality.....	0	18 6	—
Flasks of 75 lbs., ware.....	7	10 0	—	Black.....	10	0 0	16 10 0
				Canada, Staff. or Gla.,	12	0 0	13 0 0
SPELTER.				" " at Liverpool.....	12	0 0	13 0 0
Silesian or Rhenish.....	20	15 0	—	Black Taggers, 450 lb of	30	0 0	—
English, Swansea.....	22	10 0	—				

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terms relate 2s. per box below tin-plates of similar brands.

REMARKS.—The tone of our markets as yet is not very decided, at the same time a slight improvement has taken place in some metals, and it is very encouraging to notice a change for the better, although it is quite impossible to say at present whether the change will be temporary or permanent, the signs of the times not being sufficiently clear to demonstrate the exact course which business will hereafter take, and it would, therefore, be somewhat venturesome to speculate too freely upon future events and probabilities. There have been circulated so many rumours of one kind and another that little reliance we fear, can be placed upon any of them, and until something of a definite character transpires in regard to the Eastern Question the safest plan to adopt will be to act with caution and moderation, and not to be over sanguine about results. The worst that could befall our market no doubt is an European war, and public opinion in regard to this matter is very divided, for political intelligence is so doubtful that no sound judgment can at present be formed; but should war be averted commerce would receive such an impetus as we have not experienced for a very considerable time past. Rumours of peace have been heard, but it is not probable that any such will surface until while Russia and Turkey continue to make such vast preparations for war misgivings will naturally arise, and all that may be said to the contrary will not avail. The common interests of mankind require the preservation of peace, and the regard which is due to the feelings of humanity demand it; but when strong men have set their minds upon war and aggrandisement, other considerations appear to be of minor importance to them; and all commercial and manufacturing industries are for a time left to suffer. But a state of suspense is always an unsatisfactory condition of affairs, and as men are becoming so sensitive and susceptible to violent fluctuations, and it is sometimes thought that after the alarm is over the reality may not be so bad as the suspense, but, however that might be, one and all would rejoice to see the present anxious state of suspense speedily put an end to.

COPPER.—A very considerable business has been transacted in Chili produce, and higher prices have been realised. There is an estimated reduction in the stock in Liverpool and Swansea of about 600 tons during the last fortnight, and the quantity afloat and chartered is nearly the same as the corresponding period of 1876, when the prices ranged from 76*l.* 10*s.* to 79*l.* The stock in England compares favourably with that of recent years, for it is now 12,980 tons, against 13,330 tons 15th inst.; 11,945 tons Feb. 28, 1875; 12,838 tons Feb. 25, 1875; 21,200 tons Feb. 28, 1874; and the price is also low, for two years ago it reached 54*l.* 10*s.*, and it seldom goes below 70*l.* The prices are exceptions, but they are few, and this year's business is less than that of previous years. Prices are not likely to undergo any material depreciation, but just now political affairs are so very critical, and everything in consequence is so very unsettled, that it is puzzling to guess what is to do for the best. The market is affected quickly, and any fresh fresh exercises an immediate influence. The demand is too spasmodic to be reliable, and the action of holders is uncertain. Advice from Valparaiso led to sales of a few thousand tons during the last fortnight, and smelters have no doubt increased their requirements for the present, but the difficulty that dealers experience is to decide upon what course to pursue.

There is a feeling, comparatively low, and so far as the stocks in England are concerned, there is only a fair quantity, and if they had to deal with Chili produce only it would, of course, be very dangerous to sell at these rates, as they might not be able to cover to advantage; but there are other matters which require to be taken into consideration, and which may exercise a powerful influence upon the future of the market. There is first the stock of copper in first hands in Havre, which is unusually large; and the question is whether the owners will keep it for a better market, or will they sell at or below the current rates of the day. So long as it is kept off the market the French demand to a great extent will be supplied from this side, and prices here will consequently be benefited, especially as an increased demand is looked for from France; but on the other hand, if importers begin to sell in Paris, the market would give way. It is the support which importers have hitherto given to the market that has helped it along so well; but that support will gradually diminish, buyers will take alarm, and the market itself. If importers have no confidence in the future stability of the market they can scarcely expect buyers to display much; but let the holders of the metal preserve their interest in it by declining to realise, and higher prices must inevitably follow. There is no doubt holders ought to have sold before, for they have outstayed their market, and now begin to feel a little nervous of their position, as prices from the West Coast have come down upon them rather unexpectedly, and unless trade improves they see a heavy loss impending.

and the rest of copper, however, need not be apprehensive of the future if there is nothing to apprehend from an European convulsion. If Europe decides against war prices will rise, but while there exists any uncertain prices will be variable. Commerce is checked, and all new works are kept in abeyance pending the result of the Eastern Question, and, therefore, it is not surprising that copper or any other metal is scarce. The supply of copper to Europe is 45,141 tons, and this is rather in excess of previous periods, but there would be nothing particularly to fear from these figures were the copper not forced upon the market. There is another public sale of Wallaroo to take place this month, and the sales (and in just rapid succession upon one another at a critical time is enough to try the patience of the buyers) will be the interest of sellers and buyers, and it is hoped that in future a longer interval will be observed between the sales. A public sale every six or twelve months would be quite often enough. Wallaroo on the spot is 70s. and 75s. 10s. forward, Burra, 77s. 10s.—There is very little to add to last week's report. The markets are all in a sluggish condition, and orders are eagerly sought after.

but very difficult to secure, and, as we have so often stated, there remains but little prospect of amendment until prices are lowered. There is not much to be said against the prices charged for Staffordshire descriptions, as they are very little in excess of ordinary periods, but the same influences are at work upon them as upon that of Welsh and North of England makes. The Belgians can produce iron cheaper than our prices, and that is quite sufficient to prevent the full amount of work being obtained for English houses. There will be no gain until the trade is thoroughly re-organised, and painful as it may be for men to work hard-er and to gain less, yet it is equally hard for the merchant to take greater risk and realise only a tenth of his former profits. The times will not admit of high wages or large profits, and they must be both cut down to a minimum. If a shopkeeper has a keen competitor close by his nose, must not be either, or he will in a little time have to shut up, and England will have to close her works, unless she is prepared to make as cheap as Belgium. Scotch pigs have shown weakness, and are now quoted at about the price ruling in 1871. Stocks are increasing, the quantity now in store being 134,344 tons, being an increase of 6312 tons, with warrants in circulation for 107,400 tons. Scotch pigs, mixed numbers, to-day are quoted 55s. 1½d. to 55s. 3d.

SHIPMENTS.		
Week ending Feb. 24, 1877	Tons	6,559
Week ending Feb. 26, 1876		5,985
Increase		573
Total decrease for 1877		4,306
Imports of Middlesbrough pig iron into Grangemouth:—		
Week ending Feb. 24, 1877	Tons	5,780
Week ending Feb. 26, 1876		5,985
Increase		1,795
Total increase for 1877		12,922

Tin is lower, and closes flat. The stocks increase and the deliveries fall off. The immediate prospect is not promising, and the only feature in its favour is the low price; but it does not seem to make any impression upon the supplies, or to stimulate the consumption. The tin-plate trade is dull, and until that revives deliveries will probably continue small.

QUICKSILVER.—The price has been fluctuating between 72. 10s.

LEAD.—The market is quiet, but sales are being made for best brands at 21½, 12s. 6d. for English soft pig. Common brands are to be had below this price.

THE IRON TRADE.—(Griffith's Weekly Report).—Friday Evening.
The Glasgow market for g.m.b. Scotch pig-iron closes with buyers at 55s. 3d., a loss on the week of 3d. per ton. We pig-makers' No. 1, non-Grisshire, 62s. 6d.; Cochrane's, 60s.; "Blackburn," 59s. 6d.; "Sunderland," 58s. 6d.; "Donkald," 57s.; f.o.b. Glasgow: Glangarnock, 60s. 6d.; Eglinton, 57s.; f.o.b. Ardrossan; Shotts, 63s.; f.o.b. Leith: Kennell, 57s. 6d., f.o.b. Bo'ness. We have nothing special to notice in the London market this week. The demand for iron continues quiet, and where the least activity prevails, nail-roads and sheet-iron are most in favour with buyers; considerable orders from India and China having been given out this week. On the Continent there appears to be but little probability of any change in the probably the settlement of the Eastern Question, which now makes rapid progress, may give a stimulus to business, and fix several large orders which are wanted for Russia and the East. The failure of a large house in the metal trade in Paris has to some extent deranged the metal market, tin having sympathised with copper, which was more immediately affected by the failure. Spelter is affected, and will continue so until it can be replaced by zinc. In the American market we have no notice in the state of the market for tin-plates, which continues unsatisfactory. Pig-iron is weaker in Middlesborough, Glasgow, and Manchester, and although the price is only a fraction lower, the market at all these centres has a downward tendency. The lower classes of pig-iron are affected in Staffordshire to some extent by the drooping condition of the Middlesborough market, but best Staffordshire ship-shroving pig-iron, including the North's specification, are in no way affected by what is above; for this class prices are firm. The manufacturers as a rule are moving but slowly. Orders are scarce for most kinds. This remark applies to best boiler plates in a greater degree than any other sort.

Messrs. SANFORD and BIRD—COPPER: Since the public sales prices of foreign have advanced from 10s. to 20s. English manufactured has been sold on somewhat easier terms. The market closes steady. —**TIN:** The arrivals during the month have been large, but there has been a steady demand for consumption, and prices have fluctuated but slightly. The market closes with a somewhat firmer tendency. The following are the statistics compared with previous months:—

		Feb.	Jan.	Dec.	Nov.	Oct.	Sept.
Arrivals.....	Tons	1499	1061	658	1172	859	1041
Deliveries.....		759	896	1093	1804	1084	619
Stock, end of month.....		8505	7887	7580	7588	7174	7912
Australia, floating.....	estimated Feb. 29					7450	
Straits, ditto.....	ditto					725	
Australian shipments, estimated Feb. 1.....						2450	
Straits, ditto.....	ditto					620	

—**TIN PLATES** continue in a satisfactory state; cohes are fairly steady, 10s. to 20s., while charcoals have been sold as low as 21s. 6d. —**LITH** remains dull and inactive. —**QUICKSILVER**: A good business has been done in Spanish at 7s. 10s. to 8s. per bottle, and it closes steady at 7s. 15s. —**ANTIMONY** remains very quiet.

Messrs. HARRISON, HORAN, and Co. (Liverpool, Feb. 28).—COPPER: Since our last report upwards of 500 tons Chili bars sold at 70s. 5d. to 72s. for good ordinary brands, and 74s. to 76s. per ton for best brands, English smelters and manufacturers freely supplying their requirements. Chili copper charters for the first fortnight of this month were 19 1/2 tons, of which 1000 tons bars and 500 tons ore and regulus are for England, and 50 tons bars for the Continent. There is a very good demand to day for bars on the spot at 71s., and for arrival at 71s. 10s. Further, 200 tons bars, chiefly from the United States, are on the way. Arrivals here during the fortnight of West Coast, S.A., produce: John Elder, from Valparaiso, 432 tons bars and 200 tons ingots.—At Swansea: San Jose, from Peninsula, 642 tons regulus; Delaware, from Carrizal, 545 tons regulus. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	564	8,750	—	2	—
Swansea	33 1/2	2,049	—	—	10
Total	1382	4220	10,799	2	10

Representing about 12,950 tons fine copper, against 13,530 tons Feb. 15; 11,916 tons Feb. 28, 1876; 12,833 tons Feb. 28, 1875; 21,200 tons Feb. 28, 1874. Stock of Chili copper in Havre, 11,515 tons fine, against 2094 tons Feb. 28, 1876; stock of Chili copper about and chartered for to date, 13,700 tons fine, against 13,590 tons Feb. 28, 1876. Stock of copper in London, chiefly Australian, 3390 tons fine, against 3335 tons Feb. 28, 1876.

MEASURES, FRYS, JANS, AND CO.—COPPER: The two sales by auction on Feb. 20 of 1915, one of 155 tons, realizing an average of 77 1/2 cs. per ton for cake, and the second (400 tons) realizing an average of 77 3/4 cs. per ton for cake, or about 6% per ton lower than the previous month's sale. The market has since been steady at the decline established, and some considerable sales of all kinds of copper have been made at about the same level. About 200 tons of tin have been sold at value.—TIN has been heavy, and values have further declined by about 20¢ per ton. Stocks exceedingly heavy.—SPELTER is quiet, and for the small business the market is about 10¢ lower.—LEAD also is very quiet and slightly lower in value.—TIN PLATE has heavy.

value. —TIN-PLATES are heavy.

COPPER.—Messrs. Richardson and Co. report that the stocks of Chili copper produce on March 1 was—ore, 1351 tons, of which 674 tons had arrived during February, and 677 was already in stock; regulus, 3351 tons, the stock of 2189 tons from the beginning of February having been increased by arrivals to 4758 tons, from which 1407 tons sold privately must be deducted; copper, 1999 tons, these having been reduced to 1500 tons, whereof 1000 tons were sold; and batilla, 11 tons, which arrived during the month. In addition to the 1351 tons Chili ore there was also in stock Cape ore, 2½ tons; Algerian ore, 498 tons; Newfoundland (Bett's Cove) ore, 400 tons—2903 tons in all. These totals represent about 4000 tons fine copper. No private sales of furnace material have been reported during the past month. The Chili charters advised during the month are:—For the last half of January 1951 tons bars and ingots, 400 tons metal in ores and regulus for England, 850 tons bars for France. For the first half of February 1100 tons bars and ingots, 850 tons pure ore and regulus for England, and 50 tons bars for France. The Wallaroo sales on Feb. 29 realised an average for the whole sale of 77l. 6s. 4d. The cake, 515 tons, fetched an average of 77l. 6s. 4d. per ton. The ingot, 160 tons, fetched an average of 77l. 6s. 4d. per ton. The past month has been a very busy one for the sale of Chili bars (g.o.b.s.) both "spot" and "to arrive," the bulk of which has realised about 77l. The copper market now wears a firm aspect, and holders of bars seek 72

about 710. The copper market now wears a grim aspect, and holders of bars ask 72½. Messrs. PILEY and ANELL—GOLD.—The arrivals of gold this week have been unimportant, and the general enquiry for export has in a great measure subsided. About 255,000*l.* has been withdrawn from the Bank this week, of which 200,000*l.* this day, for Germany. The P. and A. steamer Siam takes 27,000*l.* purely in consignments for Germany, and 5000*l.* for other parts. At the date of our last circular the silver market was inactive at 59*l.* per oz. standard, but subsequently very considerable sales were effected at that price; the quotation is now 55½*l.* per oz. standard, buyers. About 170,000*l.* has arrived from Germany, and a limited amount from New York; the Delambre, from the Brazils, brings 17,500*l.* The P. and O. steamer, Siam, leaving Southampton this day, takes 153,000*l.* to Bombay. The Tasmanian, from the West Indies, has arrived at Plymouth with specie on board to the value of 390,000*l.*; details not yet known.

There is no change in the general appearance of the MINING SHARE MARKET this week, though one or two mines have been a little more in demand, and have slightly advanced in price. On the whole, prices, as for some weeks past, may be regarded as nominal. The mines most in favour have been Great Luxey, Glenryg, East Van, Van, North Luxey, South Condurw, Van Consols, Leadhill, Prince of Wales, Rookhope, and a few other.

Among TIN MINES Corn Breas are 35 to 37, call paid; at the meeting, on Tuesday, the accounts showed a loss on three months' working of 9732, and a debit balance of 3001L, charging up the cost, which was over 3000% per share, only to September last. The tin sold—207 tons—realised 88553L; copper or-s, 1116L. A call of 12 per share (1000%) was made. Tinifer, 19 to 20; at the quarterly meeting here the accounts, charging the costs to September of last year, show a profit of 1297L in the three months, and a balance of 1555L. A dividend of 5s. per share was declared. The tin sold—190 tons—realised 8222L. The report states that the prospects of the mine are quite as good as for some time past. South Crofty, 14 to 16; at the meeting, in Cornwall, the accounts showed a loss on the

three months' working of 474*l*., and a debit balance of 1349*l*. A cill of 1*l*. per share was made. The costs, charged to Nov. 18, amount to 332*l*. The tin sold—41 tons—realised 1473*l*.; arsenic, 274*l*.; copper, 1696*l*. Bickford's shaft is down 5 fms, below the 25*l*., and worth 20*l*. per fathom. Relistian Consols, $\frac{1}{2}$ to $\frac{3}{4}$; this mine is looking well, will nearly pay cost, and as the 24 is extended east increased returns are looked for. Wheal Agar, $3\frac{1}{2}$ to 3*l*. Wheal Grenville, 12*l*. 6*l*. to 17*l*. 6*l*, call paid; the water is now down to the 150, and the old engine working well. South Condurrow, which have been flat at $5\frac{1}{2}$ to 6*l*, advanced on Friday, and leave off 6*l* to 6*l*. The last fortnight's tin is said to be 28 tons.

Among COPPER MINES there is no particular change to notice. Beiford United, 15s. to 20s.; the lode in the 127 west has improved. The sampling on Thursday are 130 tons of good copper ore. The accounts to be presented to the meeting on Wednesday show an estimated balance against the mine of 31,116*l.*; the sales of copper ores credited are 896*l.* 9s. 2*d.*; and the costs charged to Feb. 22. The estimated returns for the next four months 1680*l.*; returns, 975*l.* Prince of Wales, 3s. 6*d.* to 4s. 6*d.*; the 45 west continues worth 10*l.* per fathom. Gunnislake (Clift's), 2*s.* to 2*d.*; at the meeting at Tavistock the accounts showed a balance in hand of 850*l.* No dividend was declared. The copper ore sales for four months realised 2675*l.* The four months cost was 3237*l.*; dues, 161*l.* The prospects of the mine are reported as very favourable. Devon Great Consols, 4 to 4*½*; there is no particular change here. Wheel Crebor, 2*s.* to 2*d.*; the 120 east is worth 25*l.* per fathom *u.* The 103 east is worth 15*l.* per fathom. The stope is worth 20*l.* per fathom. Hingston Down, 10*s.* to 15*s.*; Parys Mountain, 9*s.* to 11*s.*; Penstruthal, 11*s.* to 13*s.*; Cathedral, 20*s.* to 30*s.*

LEAD. MINE shares have been most in favour, and a fair business done in several of them. Van are 36 to 38; Great Lixey, 20 to 21; Van Consols advanced to 24. 25. East Van opened 8 to 8½, rose to 10, and leave off 9½ to 9½; the report states that on the whole the mine is improving, and fine spots of lead to be seen throughout the end of the 25. Roman Gravels, 13½ to 14; the directors have declared a dividend of 8s. 6d. per share. The last, of like amount, was declared in October last. The report states the 65 shaft does not look so well, owing to a split in the lode. Tankerville, 8½ to 8½; the 189, west of Watson's shaft, is worth 90d. per fathom; the 181 east, 75d. per fathom. The raising for the week is 35 tons of lead. West Tankerville, 1½ to 1½; the sampling for the month is 35 tons of lead and 20 tons of blende. West Chiverton, 18 to 19; West Graven Moor, 12½ to 15½; Aberlawn, 10s. to 12s. 6d.; Asheton, 27s. 6d. to 32s. 6d.; Glyn, 2 to 2½; G enroy, 1½ to 2; Leadhills, 9 to 6½; Ladywell, 7 to 14; Llanrwst, 1½ to 1½; Pennant, 5½ to 6; Pennerley, 15s. to 17s. 6d.; Gorsedd, 4s. to 5.

North Laxey shares have improved, and leave off 16s. to 18s.; the 40 has much improved for lead, now worth 12 to 15 cwt. per fm., and the agent hopes here to open out new and productive ground, as well as in the levels above. Combmartin 10s. to 15s.; the branches cut in the 15, the agent says, are dropping into the lode, with good silver-lead and blende; and in driving he is saving splendid quality stuff, and expects to have the lode in whole ground from surface down to the 42, which can be worked without pumping machinery, and the main level will be reached in about a week. Rookhope, 18s. to 20s.; Trebrigh Consols, 7s. to 9s.; this mine is looking better. West Asheton, 20s. to 25s. Grogwinton, 4½ to 5½, ex div.; new issue, 24 to 2½ (2½, s. paid). Red Rock, 2½ to 2½. St. Harmon, 3 to 3½. South Cwmystwith, 3½ to 4. Wye Valley, 5 to 6; West Wye Valley, 3½ to 3½. Goodwin, 4 to 4.

Among FOREIGN MINES Argentines are quoted 5 to 5½; Blas Tent, 3 to 3½; Comdes, 4½ to 5½; Almadá, 7s. to 9s.; Birdseye, 15s. to 20s.; Catalina, 10s. to 12s.; Pedro del Rey, 8s. to 10s.; Eberhardt and Aurora, 8½ to 8¾; Elchigueru, 10s. to 11s.; Flagstaff, 3½ to 3¾; Frontino and Bolivia, 1½ to 1¾; Elchigueru, 3½ to 4; Kapanga, 2½ to 3½; Last Chance, 2 to 2½; Los Quisquada, 4 to 4½; Pastearosa, 3-6½ to 5-6½; Rihim and, 6½ to 6¾; St. John del Rey, 2½ to 2¾; San Pedro, 3 to 3½; South Aurora, 6-7½ to 8.

The Market for Mine Shares on the Stock Exchange during the week has fluctuated between moderate activity and dullness. The fortnightly settlement in the early part of the week interfered, as usual, with ordinary business, but upon the completion of the "account," on Wednesday, more animation prevailed, continuing till the close. Upon the whole, the market presents a more favourable appearance. The most prominent feature among home mines has been a renewed demand for East Van shares, which have changed hands at 10, but close weaker. The feature in the foreign department has been a decline in St. John del Rey and Richmond.

St. John del Rey, 230 to 240; the telegram from Rio (Feb. 24) states the produce for the first division of February—eight days—to have been 6750 oits., of the value of 2615/, the ley of the ore being 46 oits. per ton; the low produce is again attributed to large temporary admixture of killas and quartz. The profit for January was 6900/. Don Pedro North del Rey, 2 to 3; the advices state that the general work had again (Jan. 24) improved. The drainage was progressing slowly, owing to want of surface water a few days and several accidents happening to the machinery. The telegram from Rio (Feb. 24) gives 1250 oits. as the clean-up for the first division of February.

Argentine, 5 to 5½; the advices state that the lode is rich in the north part of the mine in the Piqué. Mr. Oxland had arrived in the country, and was on his way to the mines. The works are being carried on satisfactorily. Condes, 4½ to 5½; the advices received this week state that the reverberatory furnaces are turning out 2 tons of regulus per day, and the blast-furnace was expected to be lighted within a few days from the time of writing. The mines are turning out large quantities of rich ore, and are said to be increasing in value.

Richmond, 6 to 6½; the usual weekly telegram states the week's run at \$40,000. The refinery this week has produced doré bars to the value of \$30,000. No report from the manager had reached the London office at the time of going to press. It is reported that cross suits between the Richmond Company and their neighbour the Eureka Consolidated Company are in progress. Exchequer, 1½ to 1½; Mr. O'Hara was expected at the mill on February 9 to make the connections with the mill machinery and furnaces. The manager writes confidently as to the monthly out-turn of bullion, adding that when the wire-rope has been fixed at the distilling works the present output of ore can be at once quadrupled.

The work was the usual output of ore can be at once quadrupled. The vein in the several levels continued to look well, maintaining a high average. The services had been secured of a first-class man from the Virginia Consolidated, and was proving himself a strict disciplinarian. I. X L, 3 to 1; the manager looks forward to a rich "find" in the 200 ft. level, as the driftage is apparently touching the bonanza. The new hoisting machinery was expected to be finished in a few days. The work being done at present is running the 200 ft. level north to get under the rich ore body in the upper levels, raising the ventilation shaft, and running Buckeye a lift for ore. The 200 foot level was in 449 feet from the cross-cut, and the hole pitching more being 552 (which is considered

but, and the lode pitching more, being 55° (which is considered a favourable feature), running 56° west of north, and 7 ft. 6 in. wide between the walls. This drift is looking well, and the underground agent says "something good may be looked for soon." There is good ore on the back and in the face of the Backer's tunnel; 200 tons were on the dump ready for shipment to the mill. Everything in and about the mine was running and working well. The miners have been partially engaged opening up the lode Elbhardt and Aurora, 8½ to 8½; there is to hand a further shipment of bar silver, valued at present price at about 19000. Amanda and Tirito, 2 to 2½; the January profit amounted to \$2400, and the remittance \$9000. South Aurora, 2 to 2½; a meeting has been called for March 7. Last Chance, 2½ to 3½; there has been some enquiry for these shares at advancing quotations. Flagstaff 3½ to 3½; private advices of a satisfactory character continue to be received, stating that the mine fully maintains its former reported value. Colorado Terrible, 1½ to 2½; a meeting has been called to consider the terms arranged for an amalgamation with the owners of adjacent mines. These include the west extension of the Terrible; and the fifth level west of the company's workings has proved the rich shoot of ore to be dipping into the adjoining ground. The heading of the level beyond the company's boundary is worth 11 tons of ore per foot.

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averaging 350 ozs. of silver per ton. The mines to be acquired aggregate over 40,000 ft., and cover nearly 300 acres. Mr. Henty says that the result of working and developing the property can only prove very profitable and satisfactory to the shareholders.

The market for Hydraulic or Gold Washing shares has been quiet, but there has been rather more enquiry. Birdseye Creek, 3 to 4; the Neece and West, Red Dog, and Wa'oupa claims, belonging to this company, are reported to be all washing and making good progress. Cedar Creek, 3 to 4; the claims belonging to this company are all washing, and as the ditches in the vicinity are carrying their full capacity good progress is being made. The Baker claim is said to be opening out splendidly. Blue Tent, 3 to 3 1/2; the latest advice is to the effect that washing would be resumed on Feb. 3. The heavy snow storms had filled the ditch, but water was expected to be brought to the mines on the above date. Further heavy rains had taken place, and plenty of water was looked for during the remainder of the season. Oregon pref., 4 to 4 1/2; the agent reports that he is steadily washing with all the water at his command, and that as rains were setting in throughout the district he expected to have an increased supply at his command thenceforth.

The shares in lead mines are without material alteration. Van, 35 to 37; there is no particular change reported from this mine. The 75 end west is looking very well, and everything progressing as usual. The company have sampled 500 tons lead and 200 tons blende, for sale next week. Van Consols, 23 to 24; the lode in the blende is reported to be worth from 70L to 80L per fathom. This is now available, as the completion of this shaft will enable the produce of this lode to be brought to surface and sent to market economically. The mine is said to be completely provided with all necessary appliances both for underground and surface operations, including water-wheels, steam engines, tramways, and dressing floors. All points in operation at the bottom of the mine are productive for lead ore, and for a length of (a most important feature) 90 fathoms apart. Great West Van, 3 to 4; the special meeting held on Monday last was well attended, and resolutions unanimously passed for raising the necessary funds to bring the mine to a success. Glyn, 1 1/2 to 2 1/2; all work is being pushed on with vigour. Grozwinion, 4 1/2 to 5 1/2, ex div.; the usual monthly parcel of 100 tons of lead was sold on Thursday, at 14L 7s. 6d. per ton, a fall of 1s. per ton from the previous sale. The mine, it is said, continues to improve, and all operations are going on in a satisfactory manner. The new shares have been allotted, and are quoted 2 1/2 to 2 3/4, with 2L 5s. paid upon them. Wye Valley, 5 to 6; the driving of the 22 east is again in better ground. The new discovery in the adit is looking well. West Wye Valley, 3 1/2 to 3 3/4; good progress is being made in sinking Brooke's shaft, and the various other points of operation are looking well. Red Rock, 2 1/2 to 2 3/4; the bottom level continues to look very promising, and the manager reports that the prospects at all points are excellent. The general meeting will be held shortly. St. Harmon, 3 to 3 1/2; the cross-cut in the 67 is making good progress, but at present is not through the lode, which is very wide. The lode in the 35 has again improved, and is yielding good ore for its entire width. South Cwystwyl, 3 1/2 to 4; new shares (5s. paid), 3 to 4. No. 2 lode, in the shallow adit, is yielding splendid ore, and is very rich. All other points are looking as promising as ever, and the manager says the prospects were never better than at the present time.

Pennery, 3 to 4; the 130 east is worth 1 ton per fathom, and the indications are most encouraging. The winze sinking below the 120, and in advance of the 130 end, is worth 2 1/2 tons per fathom. The ground in the cross-cut south towards the Warm Water lode is difficult for progress. The stopes are turning out about the usual quantity of ore. Pateley Bridge, 2 to 2 1/2; the 30 east is improving as the end is pushed forward under the run of ore ground gone down in the level above. The same level west has every appearance of becoming productive. Other parts of the mine without change. Calledra, 20s. to 30s.; the mine is believed to be entering into a rich course of copper ore. Penstruthal, 11s. to 13s.; the mine continues to open up well. The produce for copper is variable, as is always the case when a change takes place in the Gwennap district before the reaching of a permanent course of copper ore. The lode maintains its size, and presents every indication of becoming rich for copper. Upwards of 900L of copper has been already sold since the copper was discovered.

Subjoined are the closing quotations:—
Asheton, 1 1/2 to 1 5/8; Carn Brea, 30 to 38; Devon Great Consols, 3 1/2 to 4 1/2; Delahut, 36 to 38; East Caradon, 3 1/2 to 4; East Van, 9 to 9 1/2; Glyn, 1 1/2 to 2 1/2; Great Laxey, 20 to 22; Great West Van, 3 to 4; Hingston Down Consols, 4 to 5; Leadhills, 6 1/2 to 6 3/4; Marke Valley, 3 1/2 to 4; Parys Mountain, 4 1/2 to 5; Pateley Bridge, 2 to 2 1/2; Pennery, 3 to 4; Penstruthal, 11s. to 13s.; Roman Gravel, 13 1/2 to 14 1/2; Tankerville, 8 1/2 to 8 3/4; Tincroft, 18 to 20; Van, 35 to 37; Van Consols, 23 to 24; West Asheton, 1 1/2 to 1 5/8; West Wheal Russel, 12 to 14; West Cliverton, 17 1/2 to 18 1/2; West Tankerville, 1 1/2 to 1 3/4; Wheel Center, 2 1/2 to 3; Wheal Grenville, 3 1/2 to 4; Almda and Tiritio, 3 1/2 to 4; Argentine, 4 1/2 to 5 1/2; Birdseye Creek, 3 1/2 to 4; Blue Tent, 3 to 3 1/2; Cape Copper, 4 to 4 1/2; Cedar Creek, 3 to 4; Chontales, 5 1/2 to 6; 7 1/2 to 8; Colorado Terrible, 2 to 2 1/2; Condes of Chilli, 4 1/2 to 5 1/2; Don Pedro, 3 1/2 to 4; Eberhardt and Aurora, 8 1/2 to 8 3/4; Emma, 3 1/2 to 4; Exchequer, 1 1/2 to 1 3/4; I.X.L., 3 to 4; Flanagan, 3 1/2 to 4; Frontino and Bolivia, 1 1/2 to 1 3/4; Javali, 3 1/2 to 4; Kapanga, 2 1/2 to 3; Last Chance, 3 1/2 to 4; Malpasso, 1 1/2 to 1 3/4; Malabar, 4 to 4 1/2; New Pacific, 3 1/2 to 4; New Quebrada, 4 to 4 1/2; Pestana, 3 1/2 to 4; Pumas Roca, 2 1/2 to 3; Rica, 3 1/2 to 4; Richmond Consolidated, 6 to 6 1/2; St. John del Rey, 280 to 290; San Pedro, 3 1/2 to 4; Sierra Buttes, 1 1/2 to 1 3/4; South Africa, 4 to 4 1/2; Tecoma, 3 1/2 to 4; United Mexican, 2 1/2 to 2 3/4; Oregon (pref.), 4 to 4 1/2.

COLLIERIES.—We have to report another week of little or no business in these shares. Prices have been, generally speaking, maintained at the rates quoted last week, and in one or two instances, where special circumstances have operated in their favour, shares show a slight increase in value. This is especially the case with Chapel House shares, which are 3 1/2 to 3 3/4, owing to the cutting of the Park Mine, which proves to be of very first rate quality, and thicker than was expected. This materially improves the value of the property, and the shares may, therefore, be expected to reach a higher figure very shortly. There is no change in Thorp's Gwiler, which are at 1 1/2 to 2 1/2; the meeting was held on Tuesday, but was restricted as a private one, and reporters were consequently excluded. Our reports from the various colliery districts exhibit no change of importance. The trade of North and South Wales appears, however, to be looking up, and at the Bettisfield Colliery, in the Wrexham district, orders are so plentiful that the manager states he could employ 500 additional men. The shipments from South Wales have somewhat increased during the week. Most of the ironworks are getting more busy, and, indeed, everything points to increased activity in the iron trade. All the shares close at 5 to 5 1/2; good progress is reported towards the main seam in the bottom shaft at section D, and the tram continues to work well. Llay Hall, at 4 1/2 to 5; New Sharleton at 4 to 4 1/2; Newport Abercrom, 3 1/2 to 4 1/2; Caeke, 2 1/2 to 3; Bilton and Gwern, 6 to 6 1/2; Cardiff and Swansea, 2 to 2 1/2; Cannock and Huntington, 3; Harwood, 1 1/2; Mid Cannock, 1 1/2; Sandwell Park, 2 1/2 to 2 3/4; Epon Line, 4; West Cannock, 7 1/2; ditto, new, 17 1/2.

At Swansea Ticketing, on Tuesday, 1363 tons of copper ore were sold, realising 11,232L 17s. 6d. The particulars of the sale were:—Average standard for 9 per cent. produce, 96L 0s. 6d.; average produce, 11 1/2; average price per ton, 8L 4s. 9d.; quantity of fine copper, 150 tons 1 cwt. The following are the particulars of two last sales:—
Date. Tons. Standard. Produce. Per ton. Per unit. Ore-copper.
Feb. 13, 2064 ... 2 95 18 ... 4 11 13-16 ... 210 17 10 ... 14s. 8d. ... 473 7 0
" 27 ... 1293 ... 96 0 6 ... 11 1/2 ... 8 4 9 ... 14 5 ... 72 1 0
Compared with the last sale the standard is stationary. No Cape ores were sold. There will be no sale next week.

At the meeting of the Scottish American Investment Company, held in Edinburgh, the directors' report and balance-sheet were received and adopted, and a dividend on the paid up capital of the company at the rate of 10 per cent. per annum, free of income tax, payable on March 2, was declared.

BRITISH LEAD MINES.—The sixth edition of Mr. Murchison's pamphlet is published to-day, and for the convenience of those who already have the body of the work, with maps, the "Prefaces to the Six Editions" are issued in a separate form, at the reduced price of 1s. Mr. Murchison states that British lead mining continues prosperous, notwithstanding the protracted and apparently settled depression in trade and commerce generally, both at home and abroad. The dividends paid by the public companies in 1876 amounted to 119,469L, against 112,569L in 1875, and only 82,811L in 1874. Very full particulars of the present position and prospects of a number of the principal lead mines, including Van, Tankerville, Roman Gravel, Darwent, Leadhills, Minera, Great Laxey, North Laxey, West Tankerville, &c., are given, to which we would refer all those interested, or about to become so. Mr. Murchison expresses a hope that the public will at last be induced to support the working of British lead mines, which require only a moderate capital, and can be easily

examined, in preference to squandering immense sums on foreign properties, which seem to derive their chief attractions from their magnitude, the distance of their situation, and the aggravated uncertainties as to their merits and prospects.

EXTRAORDINARY DISCOVERY OF COPPER NEAR WELSHPOOL.—A very rich discovery of copper has been made at a place called Pant, about ten miles from Welshpool, was found in opening out a limestone quarry, and presents where seen (about 10 fms. from surface) a most beautiful appearance, being brown, blue, and green, intermixed with a very fine sugar spar. One stone taken from it weighs upwards of 5 cwt., and can be seen at Mr. Caton's wharf, Welshpool. A small stone sent to Messrs. Vivian and Sons, of Swansea, elicited from them an offer of 21L per ton. Immediately under the limestone (about 10 fms.) is a hard sandstone, and no doubt when this is searched the lode will be found even more productive; as far as now seen it is some 12 ft. wide, filled throughout with stones of rich copper, intermixed with soft flooken containing copper (limestone decomposed by the copper), a considerable quantity of which was taken away to mend the banks of the canal before its value was found out.

NORTH LAXEY.—A most important discovery has been made at this mine—in the 40, on the west lode, which is now worth 12 to 15 cwt. per fathom. There is every appearance of their at once opening up some new and productive lead ground at this point, which is in whole ground to surface, and with this view cross-cuts are begun at the 27 and 12. The lode in the 121 winze is improving, now worth 15 cwt. to 1 ton per fathom. The new stope in the bottom of the 60 is worth 10 to 15 cwt. per fathom. The stope in the back of the 60 is up to the 50, and continues to go off whole to the side, where a level will be driven in the present end, worth 15 cwt. per fathom. The 50 stope is worth 1 ton per fathom. Altogether, the mine improves very materially.

LANIDLOES (Lead).—The last report from the manager states that the lode in the 72, or bottom level, is still opening out in a satisfactory manner, and that he will be able to return enough lead to pay the current month's working. There can be no doubt that if the small amount of money requisite to open out more ground be provided the mine will well repay for working; but working upon the present small scale will never prove remunerative, as the dead charges are so heavy. We hear that a further considerable portion of the new capital has been subscribed this week, and that the executive are confident that all that is required will be forthcoming in due course. If this expectation is to be verified we look for the best results. The mine is well provided with all mechanical requisites, possesses one of the largest Cornish engines in the district, and only needs working on an extensive scale to become a commercial success. It rests entirely with the shareholders to bring about so desirable a result.

RELISTIAN CONSOLS.—This mine has been specially inspected by two or three agents of late, and from the reports it is opening out in a very satisfactory manner. In the 10, which is now under the ground that yielded large returns of tin in the adit and above, pitches are set at 10s. in 1L, and as the 24 gets up to this ground it is thought good profits may be made, even at the present price of tin. The mine is complete with all the necessary pumping machinery, steam-stamps, dressing floors, &c., which have cost a large sum of money. In ordinary times such a promising speculation would command a high premium and more attention; and the present proprietors, at any rate, deserve success for the manner in which they have steadily persevered in opening it out. At present there are few better speculations in Cornwall, at a price which is less than the original cost of the plant.

GORSIEDD AND MERLLYN.—The recent discovery looks well; 50 tons of lead will be sold at the ticketing, leaving a considerable profit on the month's working.

THE LANIDLOES DISTRICT.—Van Consols shares have advanced to 2 1/2, 2 3/4, and are decidedly in favour. East Van shares have also advanced to 10 1/2, 10 3/4, and the same spring is uppermost that prevailed a year to 18 months ago. This mine is one side of the Van, and the Van Consols on the other, and without comparing their respective merits, it must in fairness be stated that Van Consols has sold by far the largest amount of lead ores up to this date.

With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: The Iron Industries of Cornwall (R. Meade); Outlines of Geology—No. IV.; Hydraulic Mining; Mining in Queensland; Vintners Copper Mining Company (T. R. Clarke, S. C. Hadley, J. Holman, R. K. Roskilly); the Late Newfoundland Mining Company, now the La Manche Mining Company; the Richmond Mine; a New Coal Field; Rittinger's Percussion Frame; Utilising Furnace Slag; Cardiganshire Mines, A. D. 1877—No. V. (Abraham Francis); Lead Mining in North Wales (T. Treddick); Science in its Application to Mining; "Justitia," and Capt. Knapp (J. Thomas); Investment for Capital; Cornish Mining—the Gwennap District (C. Bawden); West Cliverton, and the New Machinery; Tremithick Mine (R. Symonds); Mines near St. Austell (R. Symonds); Barnardian Rhapodies; Lead Mining as an Investment (J. J. Reynolds)—Registration of New Companies Foreign Mining and Metallurgy—the Mechanics of Engineering—Metal Work—Lever's Mining Almanac—Practical Dictionary of Mechanics—The Worth of Wages—Technical Education in Japan—The Porcelain and Porcelain Minerals of Japan—Solid Emery Wheels—Rock-Drilling Machinery—Improvements in Rock-Drills—Meetings of South Wales, Green Harth, Great West Van, Plympton, Prince Patrick, Carn Brea, Tincroft, and Colorado Terrible Companies.

NOTICE OF REMOVAL.
MESSRS. F. W. MANSELL AND CO. (SWORN STOCK AND SHARE BROKERS), have REMOVED to 43 AND 43A, PALMERSTON BUILDINGS, OLD BROAD STREET, LONDON, E.C.

THE ADVERTISER has secured a most VALUABLE DEPOSIT OF CORNISH CHINA CLAY, and wishes to meet with a GENTLEMAN TO JOIN HIM IN OPENING THE SAME, OR FORMING A COMPANY TO WORK IT. A small sum is only required to purchase and open same, and the vendor would have no objection to guarantee 50 per cent. on outlay if required. He has also secured a Silver Lead set in a splendid rich district for mineral; an adit level can be had, and a great discovery made in a short time. Address, "Engineer," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

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V A N L E A D M I N E .—Particulars of this very valuable Mine will be found in the SIXTH EDITION OF MR. MURCHISON'S WORK ON BRITISH LEAD MINES, published THIS DAY, with Maps, &c., price 2s. 6d. The Prefaces to the Six Editions price 1s. 8, AUSTINFRIARS, LONDON.

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Full particulars of the above and other valuable LEAD MINES will be found in the SIXTH EDITION OF MR. MURCHISON'S WORK ON BRITISH LEAD MINES, published THIS DAY, with Maps, &c., 2s. 6d. The Prefaces to the Six Editions, 1s. 8, AUSTINFRIARS, LONDON.

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Notices to Correspondents.

* * * Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

WEST MARIA AND FORTESCUE.—A correspondent asks a variety of questions respecting the management of this mine. We could not read the letter because of the strange paper and ink used, or it should have appeared. So far as we can make out, the property is considered to be very good in the locality, but the officials are not approved, and their conduct generally is impugned. How are the accounts kept, the supplies ordered, and by whom? How is the arsenic sold? &c.

ELECTRICITY FOR BLASTING AND SIGNALLING IN MINES.—In the report of Mr. Brain's lecture on this subject, in last week's Journal, there are three typographical errors. In electric blasting the charges whether few or many can, with rapid influx of water be coolly united (not mixed) up. Mr. Geo. Keeling conducted his boring and blasting operations in Lydney Harbour at 14 ft. (not in.) below the water level. It is, of course, the external plate (not place) of condenser that is referred to.

Received.—"Shareholder" (Richmond) should apply at the office for the information he requires.—"S. C."—"G. W."—"A Subscriber" (Colorado Territory).—"E. T. O." (Aberystwith).—"X." (Bedford United).—"R. H."—"T. R. C." There was not time to get a sketch made.—"M. B. G."—"Common Sense" (Richmond) is somewhat too harsh on the directors.—"Reader" (Glasgow).—"J. R. E." (Skipton).

NEW STONE AND ORE BREAKER.—Mr. Henry Sunderland, of Birmingham, the inventor of the new stone and ore breaker, referred to in last week's Journal, writes that the cost would be no more than those now in the market. Indeed, they would not cost so much, though whether they will be put upon the market at a lower price has not yet been determined. An illustrated description of the machine will be published in the Journal in the course of a few weeks.

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.

IMPORTANT NOTICE.—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the *Mining Journal* to many countries will be reduced to one fourth. Henceforth the subscription will be 1/10s. 4d. per annum (39 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxembourg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Serbia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 1/10s. (50 frs.).

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, MARCH 3, 1877.

THE BOARD OF TRADE, AND RAILWAY AND HARBOUR LEGISLATION ON EXPLOSIVES.

The question has often been asked to what cause in particular is the vast wealth and extended dominion and power of Great Britain, which appears such a small spot on the map, more particularly to be attributed? Some have insisted that our insular position, combined with the energy and perseverance of the people, is sufficient to account for all, while some have pointed to our maritime strength and extended commerce, more particularly our cotton trade, and others again refer back to Magna Charta and our system of government, securing, as it does, the greatest possible freedom of thought and action, combined with the greatest order and security of property. Others, again, point to our mineral resources as being the keystone and true foundation of our prosperity, and triumphantly ask, where should we have been but for our coal and iron, our lead, copper, and tin? No doubt can be entertained that without these to work with the energies and mechanical skill of the nation would have been sorely crippled, and its commercial prosperity could not have been developed to anything approaching the extent to which it has been, and we must have remained a third or fourth rate power in Europe instead of occupying the proud and commanding position we now do.

Unfortunately the mining interest has for a length of time been in a very depressed state. Numerous concerns have been, and are being, closed; not only copper and tin mines in Cornwall, but coal mines and ironworks in almost every other locality where they exist. The distress, indeed, is such that the Government would have been quite justified in issuing a Royal Commission to enquire into the cause, and see if any measure of relief could be devised for the assistance of so important an industry; but instead of this Parliament, acting on the suggestions and under the guidance of the late and present Home Secretaries, has for some time past pursued the directly opposite course, and passed several measures calculated to cripple and impede mining enterprise, and to subject mineowners to all kinds of vexatious interference and expenses. The Mines Regulation Act added considerably to the debit in the cost-sheet of every mine, and now complaints far and wide are being made of the Explosives Act and the way it is being carried out.

The late Home Secretary prepared the scheme, and the present adopted it, and induced Parliament to pass the most complicated and unintelligible Act the statute books contain. So difficult is it to understand, with its 122 sections, 5 schedules, and its addenda of eleven orders in Council, and four orders of the Home Secretary, that the authorities at the Home Office have found it necessary to prepare and publish for the guidance of the public no less than seventeen abstracts or explanations under several heads, but in doing so the Home Secretary and his advisers being conscious of the impossibility of understanding and reconciling the different enactments and orders above referred to, have taken care to insert a paragraph at the head of each of these abstracts, explaining that they "are of no legal validity," and that the public "must not rely on them," but reference must be made to the Act of Parliament itself, and the general orders in Council issued under its provisions. In other words, they cannot explain with any degree of certainty the legal effect of the provisions they have themselves concocted and foisted upon Parliament and the country. As a specimen of the rigorous and vexatious way in which this Act is being enforced the Home Office some time since prosecuted an importer of detonators for not having given the notices required by the Act of Parliament previous to the goods entering the Port of London. It was proved that the importer when ordering the goods gave express instructions to the foreign manufacturers to send him full information before shipment by what vessel and to what port the detonators would be consigned, to enable him to give these notices, and that they had omitted to do so, and the goods arrived in the Thames unexpectedly and unknown to the importer; he, nevertheless, was prosecuted by the Home Office, and the magistrate felt bound, it being a Government prosecution, to inflict a heavy penalty and to declare the detonators forfeited, because the importer had not given notice of the shipment of which he was in ignorance, the magistrate at the same time declaring that the Act was so complicated as to be unintelligible, and that no one could be expected to understand it. Numerous other instances of the oppressive and vexatious working of the Act have been communicated to us, the effect being that parties dealing in explosives are obliged to charge extravagant prices as the only means of protecting themselves against the risks they run of unknowingly incurring ruinous fines and confiscation of property. Another and more important subject of discontent and hardship on mineowners arises from the difficulties they have now to encounter in obtaining delivery of modern explosives, and the high prices they have to pay for them.

By the Explosives Act railway companies are authorised to make bye laws for the regulation and transport of explosives on their lines of railway, and harbour authorities are authorised to make bye laws for the regulation, and loading, and unloading of vessels carrying explosives, and these bye laws, if sanctioned by the Board of Trade,

are to have the force of laws, with penalties attached for their non-observance. It clearly was the intention of Parliament that the Board of Trade should exercise reasonable supervision and control over the framing and allowance of these bye laws, which were intended for the protection and promotion of trade and industry, and it might reasonably be presumed that the Board would do so, but unhappily directly the reverse has hitherto been the case, and the most obstructive and objectionable bye laws are readily sanctioned by the Board, regardless of any objections which may have been raised by parties interested in the trade. In some instances, indeed, bye laws have received the sanction of the Board of such a ridiculous and absurd character as to be calculated to bring legislation into contempt.

We have before us the bye laws for regulating the conveyance, loading, and unloading of gunpowder and other explosives at the port of Leith, with a memorandum at the bottom signed "C. CREIL TREYOR, an assistant secretary of the Board of Trade," certifying that they were sanctioned by the Board on Oct. 6, 1876. By these bye laws no gunpowder or other explosive is to be admitted into the port for shipment unless by railway in a close covered railway van lined with leather, kamptulicon, linolium, or other soft non-porous material, to be approved of by the commissioners, or superintendent of the harbour, and the van is to be taken to the place of shipment by manual or animal power only. The men to be employed are to be certified that they are thoroughly instructed in the bye laws, and are of sober habits, though no provision is made that they shall be sober at the time of their employment, and they are to be attired in clothes without pockets or metal buttons, and boots having no exposed iron. No horses are to be allowed to enter the docks or be on the pier unless they are shod with magazine shoes, having no exposed iron or steel. How they are to be fastened on does not appear. Before the shipment the superintendent of the docks is to cause the pier to be carefully swept, and to be sowed with water, both before and after the shipment, and the shippers are to lay down on the pier Wadmill tilts, hides, haircloths, or other soft and suitable material to be approved of by the superintendent of the harbour, and also to cover it with woollen cloth, or in such other way as he shall direct. It does not appear whether the sowing with water before and after shipment is to take place while this covering of padded carpet remains down or not, but all this parade and preparation is to take place every time the smallest quantity of gunpowder or other explosive is shipped, and, moreover, two watchmen at least, besides other men, are to be employed at the expense of the shippers, who are to be liable to fines of 20/ and confiscation of their goods in case of any neglect by any of the men employed, not only by themselves, but by the harbour authorities. It is needless to say that such bye laws amount to prohibition, and the intention of the Legislature is frustrated and set at naught with the sanction of the Board of Trade. Only fancy the absurdity of a cart-horse being paraded on a padded carpet on Leith Pier decked out in magazine boots, and the shippers having to pay a fine of 20/ and have their goods confiscated if he kicks off one of his boots, which are not to be nailed on; or if one of the servants of the harbour master is seen on the pier with either a pocket in his dress, or a metal button on his coat. It almost seems as if these bye laws were framed by some wag to test the efficiency of the Board of Trade supervision, and see what absurdities they could be induced to sanction.

The effect, however, of this legislation must not be lost sight of. If the mining interest is to be debarr'd the use of explosives except at exorbitant prices because the Board of Trade is so supine and indifferent as to the effect the bye laws they so readily sanction will have on the industries and trade of the country, the sooner the mining interest bestir themselves and appeal to Parliament for relief the better.

Railway companies instead of making bye laws to regulate the traffic in explosives refuse to carry them, and the Board of Trade looks on and acquiesces in their proceedings, while harbour authorities either openly act in the same way, refusing to admit explosives within the precincts of their harbours, or concoct evasive bye laws with the same object, and the Board of Trade sanctions and gives legal effect to these proceedings, whereby mining enterprise in this country is crippled, and mineowners are either deprived of the use of dynamite and similar explosives altogether, or have to pay very extravagant prices for them, and during all this time they are openly and freely carried on railways for the benefit of mine owners in America, Austria, Denmark, Norway, Sweden, Spain, Portugal, Italy, and in the other chief mining districts on the Continent, and no accident has ever been reported to have taken place either abroad, where it has been very largely carried, or in this country, where for a length of time it was carried as ordinary merchandise, and without the admirable and careful packing and precautions now required by law.

In considering the unreasonable course adopted by railway managers and harbour authorities it must not be forgotten that an immense body of scientific and other evidence has been laid before Parliament to prove the safety with which dynamite and similar explosives may be transported on railways and public roads, and that Major MAJENDIE, R.A., Her Majesty's Inspector of Explosives, has reported that it is safer to carry than gunpowder packed in barrels, and yet the railway companies consent to carry gunpowder, while they refuse to carry dynamite and other modern explosives.

IRON TRADE PROSPECTS.

It cannot be denied that the wretched Eastern Question exerts a certain depressing influence upon the iron trade, as well as upon the national industry of Great Britain generally. It is not that men anticipate with alarm war between Russia and Turkey. Such a struggle is much, of course, to be deprecated, as well on humanitarian as on commercial grounds; but the danger obviously is that a conflict between Russia and Turkey once commenced it might extend to other neighbouring countries, and even involve Western European countries in a struggle of which it would be difficult to predict the ultimate consequences. Of course, this view of the matter may be of too gloomy a nature, but still the consideration is one which prudent and reflecting minds cannot altogether overlook. This being the case we cannot wonder at the general exhaustion and uneasiness which prevails. It must be remembered that this unhappy question follows closely upon the general weakening of credit, which commenced with the partial collapse of Turkish credit in October, 1875, and its complete break-down in April, 1876. The failure of a great number of limited liability companies, the fall in the price of Egyptian bonds, the instability of American railroad bonds, the general feverishness of the money market were all bad enough; but as if they were not bad enough, they have been rendered a good deal worse by the miserable imbroglio known as the Eastern Question. The political troubles of Turkey have, indeed, an intimate connection with her financial embarrassments, and may be said to have arisen out of them. Russian statesmen may not be very magnanimous, and they may be deficient in real foresight, but they possess a good stock of cunning, and the Eastern Question which looms so large in this anxious March, 1877, is but the natural sequence to the national bankruptcy to which Turkey was helplessly drifting in March, 1876.

But it may be asked "What has all this to do with the British iron trade?" We reply unhesitatingly that it has an important bearing upon that once prosperous but now greatly depressed branch of our national industry. An agitated Europe is not likely to absorb very much of our railway iron. A Protectionist America will also, we may depend upon it, use as little British iron as possible. The Canadas, again, are in a state of obvious depression. Under these circumstances it appears likely that the most reliable and valuable demand for our railway material is likely to prevail upon home, Anglo-Indian, and Australian account. The affairs of the great home railway companies being now, as a general rule, well administered, they are likely to maintain the high credit which they have deservedly acquired; and, this being the case, they will, in all probability, continue to consume very considerable quantities of rails, as well for duplications and improvements as for extensions and absolutely new works. The Anglo-Indian demand may also possibly prove of some value and importance, although the Anglo-

Indian Government exhibits considerable caution in undertaking new railway works. The Australian demand we are disposed to regard with hope and confidence, since the Australians were never so prosperous or so enterprising as they are at present.

ELLISTOWN NEW COLLIERY.

We have been favoured with some interesting particulars of this property, which promises to become one of the most important of the many new collieries which have within the last few years sprung up in the Midland Counties. Ellistown is in the parish of Ibstock, in the county of Leicester, and connected by the Barton branch of the Midland Railway with Leicester and the Midland Main Line, and is so placed in direct communication with the leading markets of consumption for high-class coals for household and manufacturing purposes. The property has an area of over 500 acres, and embraces, irrespective of its coal measures, important deposits of iron ore, fire-clay, &c. There are at present three shafts sunk, one 13 feet in diameter to a depth of 300 feet for pumping, and two winding shafts, 10 feet and 13 feet diameter respectively, and sunk to the Roaster Main coal at a depth of 975 feet. Extensive underground operations are being carried out, and headings being driven in the main seam, the output at present being about 500 tons per day, which will be gradually increased as the workings are extended.

The surface machinery, plant, and appliances are of the newest and most perfect kind, embracing branch railways, sidings, locomotives, weigh-bridges, &c. The principal winding engines consist of a pair of horizontal high pressure engines, 34 inch cylinder, 5-foot stroke; the winding drums are 20 feet diameter, and capable of raising from one shaft 4000 tons per week. These engines are driven by eight Lancashire single-flued boilers, 25 feet long, and 6 feet 6 inches diameter, all of the most modern and approved character. The engine boiler-house and chimney, which is 150 feet high, are of red brick, all most substantially built. The head gear are 50 feet high, surmounted by two 20-foot pulleys, and the most modern appliances for rapid and safe winding, and carrying two of King's patent disengaging hooks to prevent over winding the shafts, being worked with cages and conductors. The pumping is effected by a pair of "Special" direct acting steam pumps placed underground, having 21-inch steam cylinders, and 8-inch rams, with 3-foot stroke, and now raising about 20,000 gallons of water per hour 300 feet high. The workings are further provided with powerful pumps and appliances, capstan crab, and gearing of the most substantial kind. The winding engine of the 10 feet shaft is a horizontal high-pressure engine, 24-inch cylinder, 4 feet stroke, with winding drum, temporary head gears, cages, and conductors. These engines, as well as those for the pumping, are driven by six Lancashire boilers, 25 feet long, and 6 feet 6 inches diameter; engine and boiler-houses, with chimney shaft 140 feet high, are most substantially built of red brick. The out offices of the colliery consisting of manager's offices, machine houses, stores department, carpenter and smiths' shops, stabling, saw mills, with horizontal high pressure engine, saw benches, &c., and all constructed in the most substantial and perfect manner. No expense has been spared in having everything both for the safety and comfort of all connected with the colliery carried out in the most complete and satisfactory way. Magazines have also been provided for the storage of dynamite and blasting powder used for the working of the colliery.

And now we pass on to note the character and quality of the coal, which we think is as satisfactory in its way as are the appliances and equipments which have been provided for getting it out. The sinkings have proved 10 different seams of coal, the aggregate thickness of which exceeds 50 ft. The two principal seams are the Top Hard coal, at 258 yards, and the Main Roaster coal, at 322 yards—the former 5 ft. 6 in. thick, and highly adapted for steam purposes and iron smelting; the latter 9 ft. 2 in. thick, and admirably suited for house purposes, being of a very first-class quality. Both these coals have recently been analysed by an eminent analyst with highly satisfactory results. They are found to be very free from sulphur, and to yield a very small percentage of ash. The Top Hard coal especially recommends itself on this account to the attention of the ironmaster. At a depth of 233 yards two seams of canal coal have been sunk through of the aggregate thickness of 5 ft. which, with the growing demand for coal for gas-making purposes, will ultimately be worked to great advantage. The sinking has also proved two important beds of ironstone, a recent analysis of which gives 33 per cent. of metallic iron.

Active additional works are in progress both on the surface and in the pit workings, with a view to the thorough development of a colliery which we may almost say is second to none in the kingdom, and which the already largely increasing demands for its products appear fully to justify, and promises its spirited proprietor, Mr. J. J. Ellis, of Portland-place, who has spared no expense to bring this undertaking to a successful issue, not only to be mine of unusually fine coal, but, let us hope, one of wealth also.

EXPORTING COAL TO AMERICA.—A familiar phrase is that of "sending coal to Newcastle," but in its literal sense it appears to be just now more than carried out. America has the largest coal fields in the world, the Appalachian basin alone having an area of no less than 55,000 square miles. The Richmond coal field contains several valuable seams, one of which is from 30 to 40 ft. in thickness, highly bituminous, and equal to the best coal of Newcastle. Yet we have it on undoubted authority that there has just been a purchase of 1000 tons of Newcastle coal to be shipped from England to New York, and put into carts in that city free of expense at 33/6 in gold. The coal is to be used in the manufacture of gas. If we take the dollar at 4s. 2d. this would be about 14s. 1d. per ton. This fact at once shows that things are not so very bright in the United States, and that the efforts made by terrorism and every description of lawlessness will have the same effect there that they have wherever attempted. The trade is driven out of the country, and the very means by which wages are tried to be kept up beyond a certain point are those that have just a contrary result. The English colliers, too, will be able to judge of the present position of the colliery owners in this country when those in the North of England are willing to sell the produce of their mines at such a very low figure, and even compete with the Americans in their chief city. To do so it is almost needless to say that they are working without any profit whatever. But they have rents to pay, which they cannot forego, and they are desirous of keeping their men as well employed as they can, and these are the principal inducements they have for selling as they are doing. We are told by the West Yorkshire miners, who have recently had notice of a 10 per cent. reduction, that the selling price of coal at the pits is something between 14s. and 15s. a ton. This we can scarcely credit, for we know it is being sold at about half the sum in South Yorkshire, and it is very unlikely that the West Yorkshire colliery owners are obtaining as much for their coal at home as those of Newcastle are getting for it in New York, having to load and unload, as well as pay the cost of freight.

THE MINERALOGICAL SOCIETY.—As it is essential that accuracy should be observed in connection with all scientific affairs, we do not hesitate to correct an error that is being propagated with regard to the origin of the Mineralogical Society. The inception, organisation, and promotion of the society is due to our esteemed correspondent, Mr. THOMAS ALLISON READWIN, F.G.S., and to no one else, and his clever advocacy of the project was nobly in a series of interesting communications in the *Mining Journal*. In his earliest efforts he was much assisted by Dr. Heddle, Mr. J. H. Collins, and many others; but to state that any of these played any prominent part in the promotion is inaccurate, and we feel sure none of those who adopted Mr. Readwin's suggestions and organisation would desire to deprive him of the smallest share of the honour of being the founder of the Mineralogical Society of Great Britain now that it has become a recognised institution. That it will ultimately be incorporated with and become a department of the Geological Society is the opinion of a large number of its members, the general opinion being that the older society is well able to cover the whole of the

in undertaking disposed were never so

round proposed to be occupied by the new, and that the object of establishing the Mineralogical Society will have been served by the Geological Society to devote more attention to strictly mineralogical questions.

COAL AND IRON IN THE UNITED STATES.—The production of coal in Pennsylvania appears to be still falling off. Thus the aggregate extraction of anthracite coal in Pennsylvania to Feb. 3 this year amounted to 1,781,181 tons, against 1,882,755 tons in the corresponding period of 1876, showing a falling off of 93,754 tons this year.

REPORT FROM CORNWALL.

March 1.—There is probably more hopefulness abroad in regard to the mining now than there has been for a long time past. It would certainly be rather difficult to point to any absolute present improvement, but it is quite clear that an improvement is definitely and firmly anticipated by gentlemen who are commonly held to be among the best informed, and who are showing that they possess the courage of their convictions by making wise and liberal investments. Such speeches as those made by Mr. Michell at Wood End Wood are very encouraging, and are sure to have a good effect.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

March 1.—The reduction of wages has been as favourably received in Derbyshire by the colliers as might have been expected. At some two or three places there has been a disposition on the part of some of the men to oppose it, but they have nothing to fall back upon, those not in the Association being just as well off as those who are. At Clay Cross several meetings have been held, but the great majority of the men determined to continue work on the terms offered, and matters appear to have been amicably arranged. At Unstone, one of what may be called the recently opened coal centres, the men struck against a reduction, but they are not likely to be long out, seeing that they are not able to obtain the support of those who are at work, for even colliers now show a disinclination to work for the support of idlers.

REPORT FROM THE NORTH OF ENGLAND.

March 1.—Various questions are now pending in reference to the Coal Trade which promise to bring about a reduction of the cost of working. The first of these is a proposal for a further reduction of miners' wages to the extent of 10 per cent. The miners' wages in the county of Durham are now 8s. 6d. per ton, above the level of 1871, while above ground men are paid 6s. 6d. per ton, above the range of that year. But this does not by any means represent the full extent of the difference to the coalowner in the production of coal. It is, indeed, calculated that wages all round represent an increase of some 30 per cent. above the rates of 1871, taking into account the additional number of men required to raise the same quantity of coal, and other kindred considerations; and while there is this difference in wages it is equally notorious that there has been an enormous increase in the cost of production, consequent upon the operation of the Mines Regulation Bill of 1872, while the present net average realised selling price of coal is within a fraction of the price of 1871, if it has not actually fallen below the datum line of that year. Last year the accountants appointed to examine into the price of coal in the county of Durham found that in July the average of the whole county was only 5s. 8d. per ton. Since then there has been so much of a fall that the average will be very little above 5s. per ton at the present time. The proposed increase of the hours of working the collieries is a proposal of rather a novel kind, seeing that all proposals dealing with this matter in the past have aimed rather at a reduction of hours. There can be no doubt that the great secret of making a colliery pay is to get the greatest available quantity of coal raised within a given time, but this is a fact the application and influence of which have been discounted by events of the last few years. The effect of the Mines Act of 1872 was to reduce the hours during which coals were raised in the county of Durham from 12 to 9½, and this has, of course, brought about a very largely reduced output. The owners now seek to re-establish the old order of things; to the extent, at any rate, of adding one hour per day to the time during which coals are being raised. They do not put this proposal before the men as a *sine qua non*, nor do they seek in any way to make it compulsory, but rather put it forward as a proposal that will be attended with beneficial results, and in the long run do good to both parties. It is not probable that every coalowner would even introduce the longer hours. It would only benefit certain owners to do so in the meantime, but the coal trade has asked the miners not to throw any obstacle in the way of enabling those of their number who believe that longer hours will be beneficial to carry them into effect. The continuance of the extreme depression that has recently prevailed in the coal trade is exercising a most injurious influence on both owners and workmen. There is at present a good deal of suffering among the men employed in the Durham and Northumberland coal trade, and although the Unions are doing the most they can to mitigate the distress their utmost efforts will, it is feared, be but a drop in the bucket, especially when it is considered that additional collieries are being thrown idle every day. How long the present state of affairs will continue it is impossible to say, but if it is not speedily replaced by a more auspicious era much mischief, commercially and industrially, will inevitably ensue. Prices have not undergone any material alteration for some days, but the tendency is still downwards. Best gas coals are now quoted at 9s. 6d. to 10s. per ton; secondary sorts at 6s. 6d. to 7s. per ton; best steam coals, 12s. per ton; second, 9s. 3d. to 10s. 6d. per ton. Coke, 9s. 6d. to 10s. 6d. at the ovens in South Durham. Manufacturing coals are very little in request, and the output is so far ahead of the demand that stocks continue to accumulate.

There is a further lapse of prices in the Iron Trade, and on all hands it is maintained that if the prospects are not duller than ever, there are, at any rate, few indications of returning confidence. The prices quoted for pig-iron this week have been lower than any figures touched for seven or eight years. No. 3 has actually been offered for 41s. 6d. net cash on delivery. Some merchants who went in a few months ago to buy for an expected rise must have had their calculations very seriously upset by the recent turn of events. Meanwhile, however, the production of pig-iron in Cleveland remains undiminished, and although there has been a lot of talk for months past about blowing out a number of furnaces, nobody seems disposed to begin. Such a degree of unwillingness is easily

accounted for, and quite pardonable under the circumstances. It is impossible to believe that the depression now prevailing can last much longer, and after tiding over what is reasonably regarded as the worst of the crisis, makers are unwilling now to incur the disappointment and loss of damping down. We are, moreover, on the eve of the spring navigation, when a better trade may be expected to arise, although it is extremely difficult to discriminate the quarter from whence the long-looked for improvement will be likely to come. Recent events have done much to impoverish the majority of European countries, and John Bull appears to have buttoned up his breeches pocket against the advance of further loans, as resolutely as if he were dealing with nothing but Turks. The commercial outlook is regarded on every side as very unfavourable, and the depth of the depression is evinced by the fact that even the promised continuance of peace in Europe has failed materially to influence the industrial situation.

The kindred and collateral trades of the North do not present any features calling for special remark. The chemical trade is very quiet. Neither from American nor from European sources is there any activity of demand, but manufacturers generally have only limited stocks on hand, and if a better demand were to ensue they could take immediate advantage of it. The engineering trade is dull, the works generally are more employed on repairing old than in the making of new engines. The foundry trade is in rather a more healthy state, and makers of marine engines and forgings have a pretty good supply of work on hand. Even in shipbuilding, however, things are not quite so brisk as they were, and the flatness of trade generally has interfered with shippers giving out orders on which they had resolved.

The mineral traffic returns of the North-Eastern Railway for the past week exhibit a slight increase as compared with the corresponding week of last year.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

March 1.—That which had been for some time threatened is taking place this week. Mills are being laid off with no intention of their being re-started until the demand is much better. This is being done in East Worcestershire, and likewise in South Staffordshire, and the movement will spread if soon there is not a better demand. Prices for best iron are thereby a little strengthened, but the tendency is still towards decline, and the orthodox quotations, formerly known as "the Association prices," are but rarely obtained. From 7l. to 8l. 10s. will secure a very excellent bar, though 9l. and 9l. 12s. 6d. is still demanded for certain leading brands. Stocks of pigs are somewhat accumulating at the forges, but they are mostly those produced out of this district. Sales are not now being effected for more than small lots, and they mostly relate to Staffordshire qualities, which are required to mix with the greater supply of foreign iron, which is again easier this week by another 6l. or 9d. per ton for the Cleveland product in particular. Brooch coal is being offered by some Staffordshire firms at prices which are necessitated by the drop of 1s. per ton in Cannock Chase coal. Forge coal is increasingly plentiful, and orders are very much sought after. There is likewise much competition in the furnace coal trade, and prices continue to evince a tendency to ease in all but exceptional instances, as to which 11s. is still the quotation for furnace qualities. The market is looking for a drop, but it is not easy to see how this is to be effected while the colliers refuse to work more than eight hours a day.

Capitalists seem to care very little just now for holding shares in either the colliery or ironmaking concerns of this district. Buyers offer just double the price for Sandwell Park Colliery shares at which they were issued (10l.), but sellers demand a further 2l.; holders of the 20l. fully paid-up shares of the Mid-Cannock Colliery demand 6l. 5s. above their original value, while the 30l. shares, half-paid, of the same concern stand at 2½ prem. Very different to this is the position of the West Cannock Colliery, the shareholders of which are offering their 100l. shares, 80l. paid, at 5 dis., and their 50l. shares, 20l. paid, at 2½ dis. The 10l. shares of the ironmaking concern of J. Bagnall and Sons stand at 3½; those of the Chillington Iron Company are held by sellers at 4½ buyers offering 3½. In the Darlaston Steel and Iron Company 30s. will purchase a 100l. fully paid-up share, but even at this figure there are no buyers.

At the Birmingham Wagon Company's annual meeting a dividend of 15 per cent. has been declared. The Chairman (Mr. W. Middlemore) said that probably no companies had suffered more from bad trade in the past year than the wagon companies. As to the future, prospects were not very good, and as there was no likelihood of any immediate improvement the directors had provided for it by carrying forward a balance of 13,000l. to next year's account, and 4000l. to maintenance account. It was stated that no other company in the district stood so well with the public, for they now had money offered to them at 4 per cent.

The Birmingham Canal Navigation Company report that owing to the continued depression in the district iron trade, as well as to the depressed state of trade generally, their revenue is less than that of the preceding year by 7892l. Yet the usual dividend at the rate of 4 per cent. per annum has been declared.

The Patent Shaft and Axletree Company (Limited) directors have declared an interim dividend at the rate of 5 per cent. for the half-year ending Dec. 31.

The Muntz Metal Company (Limited) directors have resolved to declare a dividend at the rate of 10 per cent. per annum, writing off certain sums from land and buildings, and machinery and tools, and carrying forward 9352l.

Orders requiring immediate execution for the home market have since my last imparted increased activity to the mills in North Staffordshire. This temporary improvement does not, however, extend to the plate-mills, which are still on short time. Prices do not materially decline. Bars of well known brands are offered at 7l. 17s. 6d. for crown quality, and 8l. 7s. 6d. for best, free to Liverpool, but unmarked iron sells at lower rates. Quietness still characterises pig-iron, and furnaces have since my last been blown out. The demand for coal is considerably within the supply, and this week more pits have been shut down.

A petition has been lodged in the Chancery Division of the High Court of Justice for the winding-up of the Hawne Collieries Company (Limited). The petitioning creditors are Messrs. Francis W. Pixley, St. Swithin's-lane, London, and H. C. Brown, of Paignton, Devonshire, both shareholders in the company, and the first-named gentleman is also one of the creditors. The petition will be heard before the Master of the Rolls on March 3.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

March 1.—The third month of the year has now arrived without any change of importance having been observed in the Iron Trade. At the same time it is observable that more work has been recently in hand at many of the local establishments, and although we hear of none of the large works so long idle being re-started, still slight indications of improvement come to hand. At Aberystwyth Works there is a prospect of two furnaces being blown in, and from Dolwais and Blaenavon come reports of a more cheering nature. The calamity which has befallen Mr. Crawshaw it is feared will tend to lessen the chances of a re-starting of the gigantic Cyfarthfa establishment. Prices for railway iron show no movement, but in a short time, it must be remembered, orders will be given out for the North of Europe, when Welsh masters will no doubt be able to secure a fair proportion. Undoubtedly, too, the uncertainty of political affairs tends to make speculators hang back. There are orders now being worked out for India, Brazil, and the Cape, with a few requirements for China. For bars a slight impetus has been given to the demand, and to Portugal a parcel or so has been sent. There is no material change to note in pig-iron. A correspondent to a local paper writes lamenting the result of foreign competition on the rail trade, and throws out a suggestion as to whether ironmasters should not send their representatives to the Continent to solicit orders, instead of sitting at "home at ease" and waiting for orders to come to them. At the steelmaking establishments there is a good deal of business doing, and every exertion is being made to increase the make.

venturers from selling the property and dealing with it just as they please; but from the moment a bid is laid upon it, and if payment of the petitioning creditors' debt is withheld the Court will decree sale, and to the extent which is necessary apply the proceeds in payment of the mining creditors generally, and will not take notice of the fact whether the machinery was brought on to the mine or the ore upon it raised before or after the mining creditors' debts were incurred. The question substantially raised in this case is whether the lien attaches to property found upon the mine at that time other than the property of the adventurers, or whether it is limited to that of which the adventurers are owners; for, unquestionably by the law of England, apart from custom or any special circumstances which by the law would have the effect of invalidating their mortgage, the mortgagees were the owners of the property, and, indeed, in possession of it at the date of the filing of the petitions. He felt with Mr. Marwick that it was a kind of mockery to tell a mining labourer in Cornwall that he should have searched the files in the custody of the clerk of the docket and judgments of the Court of Queen's Bench; but if there were hardship it was for the Legislature to remove it. The orders must be discharged. No order as to costs.

The Coal Trade has slightly improved during the week, owing to the marked change in the weather, from fine to frosty, so that the London merchants have been able to secure an advance of 1s. per ton. The colliery proprietor, however, gets no part of the advance, seeing that he is only able to keep his men going three or four days a week.

The Iron Trade keeps up very well, the make of pig being up to the average the last two months. In manufactured iron a steady business has been done at the leading works. Bessemer steel is being largely produced at the extensive works at Dronfield, where the machinery is said to be the best in Yorkshire for both blowing and rolling.

In Sheffield trade has undergone no alteration, some branches being tolerably good, but most of them in a depressed state. Some of the mills are running very well, and some good orders are in hand for munitions of war. The demand for cutlery is limited, there not being much done in common qualities, so that many of the hands are on short time. Some of the Bessemer establishments are doing very well in rails and forgings. The foundries are doing very well in castings of every description, whilst the machine and engine works are also doing very well. The coal trade of South Yorkshire has undergone very little change. Rather more has been done with London in Silketones, but this is merely a flash in the pan, for the prospects are the reverse of bright, for there is a very little doubt but what the summer trade will be even worse than it has been for a very long time. Not only are the collieries working short time, but new pits are being opened out in all directions.

The Barrow Hematite Company is now building 400 houses for the workpeople that will shortly be employed at their new colliery, and the Rockingham proprietors are also about to build a considerable number. At Darfield Main the men have struck against the reduction proposed by their employers, which they say is considerably more than 6½ per cent. At the other pits the men have agreed to the reduction, and go on as usual. The permanent fund for the relief of the sufferers from colliery accidents in the West Riding has so far been well supported, and a grant of 250l. from the surplus Hartley fund has been made to pay expenses, &c.

At the Cornwall Railway Company has had a livelier meeting than any recorded in its annals. In the first time in the history of the company a statutory meeting was held in London, and a determined attempt was made by the London shareholders to re-elect their representatives—Sir Antonio Brady, and to oust Lord Robertes in favour of Mr. H. S. Ellis. The direction accepted the challenge, and Mr. H. S. Ellis, the Mayor of Bristol, against Sir Antonio. So a poll was taken, when Lord Robertes received 5637 votes, and Mr. H. S. Ellis, against 4033 recorded for Sir Antonio Brady, and 2003 for Mr. H. S. Ellis, the capital represented amounting to 634,640l. It is not at all unlikely, now that the board have obtained this definite position, and are free from divided councils, that with the help of a committee of the London shareholders the Great Western board may be approached, and steps taken definitely to incorporate the Cornwall line with that system, thus sweeping away the recurring deficit caused on the interest guaranteed to preference shareholders, and giving the ordinary shareholders some return for their capital, though that return may be deferred. There is no doubt that it would pay the Great Western to take over such a valuable feeder.

At South Crofty meeting, on Tuesday, Mr. Rodd asked whether there was any probability of a Barrow boring machine being obtained at an early date for the mine?—Capt. Josiah Thomas said the fact was that they were unable to obtain these machines. The manufacturers had an order for six months from the Dolcoath Mine for the supply of two machines, but they had not yet arrived. He (Capt. Thomas) was not sufficiently acquainted with any other machine of the kind to be in a position to recommend it.—Mr. Rodd had heard that there was likely to be a manufactory established in Cornwall.—Capt. Thomas doubted this.—Mr. A. Richards asked if it was possible for them to obtain a license to manufacture such a machine?—Capt. Thomas replied in the negative. They had tried to obtain such a license and failed.—Mr. Rodd said the importance of such a machine in their mine was incalculable. Under present circumstances it would take 18 months to bring the 205 fm. level to the point of importance, whereas if they had a boring machine the work could be done in six months.—The Chairman said that six months ago a resolution was passed to adopt the machine.—After some further discussion Capt. Thomas was requested to do all he possibly could to obtain a machine as soon as possible.

Two important cases have been before the Vice-Warden of the Stanneries (Mr. H. W. Fisher) in connection with the Burra Barra Mining Company. In 1874 the mines were sold, with materials, machinery, &c., for 1100l. to Major Bevil, who in February, 1875, sold half his interest to the Rev. J. Forsyth. In October, 1875, Bevil and Forsyth mortgaged their interest, including ores, metals, and minerals, as well as machinery erected, or to be erected thereon, to Messrs. Tweedy and Co., who retained the mortgage as a bill of sale on Oct. 31, 1875. On Jan. 27, 1877, demand for payment of 12½ per cent. principal and interest, was made, and possession taken in customary form, the mortgage merely keeping the water to preserve the property. On Feb. 3 and Feb. 5 creditors' petitions were filed, and an order nisi obtained preventing Tweedy and Co. from selling or removing materials or machinery, and it was now urged on their behalf that there was no customary lien, claimed by the petitioning creditors, overriding a previously executed mortgage. Mr. R. K. Peill, on behalf of a working miner, as representing others in the same position contended that the registration of the mortgage was not a sufficient notice to the people supplying the goods, he remarked that it was still less sufficient to the poor miner, who could not be expected to go to the Court of Common Pleas to see if there was any such registration before he engaged to work on the mine. The mortgage covered the sum of 230l., as well as a running account against the miners' charges, which might go on any length of time, and might cover any amount of money, so that a great quantity of machinery might be sent there, engine supplied, and work to an enormous extent carried on, and these men would all the time working for the benefit of the mortgagee, deriving no benefit whatever themselves. In the present instance the debt stated with 230l., now it amounted to 1000l. or 1200l., thus really depriving the men of what they were entitled to—leaving custom out of the question.

Mr. Marwick, for a merchant, said the proper course would have been for the mortgagee to have realised, as if the injunction had not been applied for; and when the proceeds were realised it would then be a question as to how the money would be dealt with. The custom in question was this—that a customary creditor, whether a labourer or a merchant creditor, the moment his labor had been performed, or materials had been supplied, had a lien on the machinery and materials then on the mine, enforceable by a petition in the Court; and any person, whether mortgagee or purchaser, took the machinery and materials subject to this lien. The Vice-Warden, in giving judgment, said he was favourable to the claim of the mortgagees. The customary lien of a mining creditor in the Stanneries upon the machinery and other effects is, as he understood it, a lien which cannot be set in force except through the process of the Court. For practical purposes, therefore, the important moment is the filing of the creditors' petition, and then the mining creditor, in spite of his lien, has no power to prevent the ad-

accuracy of the opinion of the Society

Again, it may be stated that the tin works are employed with more regularity, but I was informed the other day by a gentleman of high position in the trade that the larger amount of work proprietors did the more money they were likely to lose. There will not, it is believed, be any meeting of the trade this quarter, nor will meetings of the trade in future be called at regular periods, but only on occasions of special emergency.

The Coal Trade is materially unchanged, and unfortunately there is no rise in prices, although slight fluctuations have been exhibited in steam coal quotations. For these the demand is good for foreign ports, especially to the Mediterranean, and freights are showing an upward tendency. For house coals the colder weather has brought about an enhanced demand. The reduction of prices for the carriage of coal on the Taff Vale Railway continues, and at the recent half-yearly meeting the belief was stated that the large mineral resources of the district would cause the traffic to be greatly increased. As stated last week, the attempted introduction of the "Billy Fair-play" system of working in collieries here has met with determined opposition, and has caused two strikes—one at Tredegar, and now the Mountain Ash men have followed the example of their brethren at Tredegar. At the Duffryn Pit and the Maesteg-Merthyr Steam Coal Collieries, Maesteg, idleness is apparent, and at the Galby's Collieries, Aberdare, work is very slack. Notices to terminate contracts have been given at several collieries, and the house coal pits are in many instances badly employed. The 17th week of the strike of men at the Mardy Pit, Rhymney, has been reached.

REPORT FROM THE FOREST OF DEAN.

March 1.—The new arrangement of wages on the 10 per cent. reduction, and the lowering the price of coal 1s. a ton, is pronounced very much of a failure, two or three reasons being assigned why it should be so. Some affirm that the trade of the country is so thoroughly disorganised and bad, and commercial confidence so utterly undermined for the time being, that no new arrangement, however favourable to the public, would effect any sudden appreciable improvement in the coal and iron trades. There is obviously some truth and, therefore, force in this view of the commercial aspects of the country. But others, who do not sympathise in the above reasons for the "situation," consider first that the drop in the prices was insufficient, thinking that not less than 2s. drop per ton would meet the circumstances of the case, viewed in relation to the neighbouring coal fields—Bristol and Somerset on the one side, and Wales on the other, which are considered as the principal competitors for public patronage; and further, that the drop was too late in the coal season for beneficial purposes; that to give a local impetus to business the drop should have been during last autumn to have effected any good. It is a fact that, following closely upon the Forest readjustment of prices and wages, the Somersetshire colliery owners have decided to lower their coals 1s. a ton, and sink their men's wages 5 per cent. Perhaps all the fore-stated views and reasons for the present lifeless depression of the commercial world, and this part of it in particular, may embrace some truth; for we believe that the re-establishment of confidence will not return to men hastily; and as to this district, the 1s. drop only, and that it came late in the season, do explain very much why the rearrangement alluded to has been scarcely perceptible or felt.

With some very few exceptional cases of spasmodic spurts, the coal and iron "situation" remains almost in statu quo, complaints being still heard on every hand; and the commercial strain throughout the entire district is still painfully felt, the tension being in many cases very severe. We are able to report, however, that the stock of pig-iron at Cinderford Ironworks is being gradually reduced; and as to the iron mines of the district, the water has gone down, and work resumed, though in some few pits the water is still troublesome. The Messrs. Brain for some time past have been engaged in preparing pumping machinery for the "deep," at Trafalgar Colliery, on the double-action principle, we believe. The tin-plate trade is locally active; but forge work is slack, though somewhat improved. Trade at the Forest Vale Works has been so slack that there was some likelihood of stopping them, and discharging all hands; but a favourable turn with fresh orders taking place, that disaster was averted, and work proceeds as before, but upon a reduced staff of workmen, the firm having, as we recently reported, discharged a number of men.

Referring again to the new arrangement, or re-adjustment, of wages and price of coal, it appears to us that a matter which has caused great dissatisfaction among working colliers, and which was mooted by their deputation at the Town Hall of Cinderford, on the 12th ult., when a new arrangement was agreed upon. We allude to the alleged frequent cutting down the price per ton for cutting the coal in the pits, amounting in some instances in the aggregate, it is alleged by the men and their agent, to nearly 2s. per ton. The Associated Masters, as an association, said that they could not entertain that matter, but, if the men felt any grievances on that point, they must refer to the respective managers, and deal with them as best they could. The men certainly complain that cropping the prices for cutting coal was a departure from the terms of the late, but now abandoned, arrangement which was agreed upon at Littledean, in June, 1875. Of course, from the men's standpoint, they were right; because, with the price cut down, a coal-cutter would not, and could not, earn the same wage as upon a higher price, and, therefore, in dealing the percentage upon the week's gross earnings, he would lose two ways—first, in the wage itself; and, secondly, in the percentage—seeing that the percentage would be half as much again upon 30s. to what it would be upon 17. The men, therefore, had apparently a real grievance. But the masters and managers reply that the nature of the coal, rock, and earth vary so considerably that a uniform price would neither be just nor equitable as between man and man. So we may say, as King James is reported to have said upon a disputed case upon hearing it stated before him. Having listened to the first statement by one side, pronounced his case good and true, but having listened to the other side declared they were both right. So we may say of the men and their employers in this case. The men had a grievance and just ground of complaint, but, on the employers' side the ground, rock, and wateriness of the places greatly varying in character, a uniform price would be unfair to them. But we have never heard or seen a suggestion proposed for remedying the conflicting circumstances, and will, therefore, just put upon paper what has occurred to us as likely, if acted upon, to give general satisfaction. Let the different kinds of soil or ground to be removed be allotted to three distinct classes, and agree for a price for each. They might be designated "hard," "soft," and "medium," adding a penny or two (or more) where in addition to the other characteristics there is the uncomfortable element or water to work in. And should any dispute arise as to whether any particular case should come under "hard," "soft," or "medium," let it be referred to arbitration, the umpire deciding where votes might be equal. Wishing the relationship of master and men to hold with as little friction as possible we have ventured to suggest the above in their mutual interest and comfort.

At the Coleford Petty Sessions, on Tuesday, Messrs. Isaiah Trotter and Thomas Butten, the proprietors of the Edwood Green Colliery Company, were summoned under seven informations with breaches of the 31, 13th, and 18th and 19th general rules; 21 and 31 special rules; and the 47th section of the Mines Regulation Act, on Jan. 12. It appeared that, by the employment of a manager who was unaccustomed to the duties, the pit was left without anyone in charge. A man and a boy were in the workings, and a stone fell upon the man. The lad, being unable to lift the stone away, struck the gong repeatedly, but no one came to the lad's aid, and the man died. Mr. Carter, instructed by Mr. Cudman, appeared in support of the prosecution, and Mr. W. Roberts, jun., for the company. A plea of guilty was tendered. The justices, having consulted, fined the company 10l. on the first information, and 2l. on each of the others, making 22l. in all, adding that they ought to have known better than employ such a man as John Selby as manager when, by asking anyone in the district, they would have learnt what an incompetent person he was.

It is a fully established fact that a large basin of steam coal underlies the Gloucestershire coal fields. At the Yate Collieries, which

have been worked for 100 years, the upper seam of household coal having been exhausted, the shaft and incline have been sunk to 1820 ft., at which depth the steam coal has been won. About 4 ft. is the average thickness of the seam displayed; the quality is said to have been proved by analysis to be equal to that of the best Welsh steam coal, and its quantity is practically unlimited. Immediate steps are to be taken for raising this coal on a large scale, with a view to meeting the demand which must certainly follow the commencement of the ocean-going steam trade at the new dock.

TRADE OF THE TYNE AND WEAR.

Feb. 28.—The House Coal Trade has improved a little this week, and prices are firm at from 11s. to 12s. per ton. There is little if any improvement in most other branches of the trade. The East Tanfield Colliery has been stopped (one of Messrs. Joicey's works); the company still have ten pits going in West Durham, and they produce a large quantity of gas and other coals, and also fire-brick goods. The Shilbottle Colliery has been stopped some time owing to an irruption of water, but part of the men have been got to work again. This old colliery is near Alnwick. It was re-opened four years ago, and it produces a very hard house coal of excellent quality. This isolated piece of coal has always been an object of interest, as it is not only of excellent quality, but the seam is also considerably thicker than any seam found in that locality, as a rule the best seams in the great coal field in Northumberland then cut in that direction—that is, north and west. The notices at Wheatley Hill expired on Saturday, and 800 men and boys are thus thrown out. The demand of the Durham coalowners for a further reduction in the wages of the miners, and a readjustment of the hours worked, has been discussed to a certain extent. With respect to the proposed reduction in the wages, as the owners themselves, when a sliding scale was proposed a short time ago, put 4s. 8d. per day as the minimum wage, it is obvious that they can really get no relief worth naming from that source. A reduction from 5s. to 4s. 8d. per day would only amount to 1d. per ton on an average. That is really not worth fighting for. The fact appears to be that the coalowners have already got all the relief that can be got out of reduction in the tonnage rate paid to coal getters. It is a very difficult question, but something may possibly be done by altering the hours worked per day. There is nothing to prevent the pits drawing coals eleven hours per day if the hands can be arranged to do it. The Mine Act only applies to boys under 16 years of age—that is, these boys cannot be employed more than 10 hours per day, or 54 hours per week. The wages of day men are higher than in 1871, but there is little change in the hours worked. It is more than probable that the addition to the cost of raising coal at the present time as compared with 1871 is due to the effect of the Mine Act of 1872. Previous to that time coals were drawn at the pits 11 hours per day, but under the new Act coals can only be drawn 9 hours per day, allowing for stoppage in putting down and drawing men out, so that if we take a pit drawing 400 tons per day before the passing of the Act only 327 tons per day can be got by the same power at present. It is admitted that the wages of the Durham miners are now only 83 per cent. above the rates of 1871, and the men employed on the surface have 6 per cent. above the wages of the same date, whilst it is stated that the cost of raising coals is 38 per cent. above the cost of 1871. The great rise in the cost of labour since 1871 has been in the wages of the men attending winding-engines. In the case we have given two men working the engines in 1871 at a cost of 1-5th of a penny per ton, but at present three men are employed at increased wages for each man, and the cost is now 4d. per ton, being an increase in this item of upwards of 100 per cent. The question appears to be, who is to bear the increased cost caused by the late Mine Act? It has been stated by the greatest authorities that this sum cannot be got out of the men, the consumer it is evident must bear a great portion of the burden, and it is well known that he is doing so in many cases, as the cost of coals to the consumers in London and most other distant markets is, perhaps, sufficient to pay the miners and all concerned fairly, but the merchants appear to intercept the sum that ought to fall to the coalowner as profit. In the home trade this is not the case, and that trade is in a better position at present than any casing trade. Peace is now concluded between Serbia and Turkey, and a report is abroad that the Russians intend to demobilise the army. Should this prove to be correct, and it appears to be very probable that it is so, there is no doubt that it will have a considerable effect on the trade of this district, at any rate that is the general impression here.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—A general meeting of members will be held on Saturday, when a large number of gentlemen stand for election as members and students. Afterwards the following papers will be read:—"On a New Form of Marine Boiler," by Mr. John Shaw; "Description of a Winding Engine provided with Variable Automatic Valve Gear," by Mr. William Page. The following paper will be open for discussion:—"On the Mechanical Effect of 'Blown Out' Shots in Ventilation," by Mr. H. Hall and Mr. G. Carke.

MINING AND STOCK EXCHANGE NEWS OF THE WEEK.

Messrs. F. W. MANSELL and Co. (Sworn Stock and Share Brokers), 43 and 43A, Palmerston Buildings, Old Broad-street, write to us as follows:—

Our usual contribution is omitted from this issue, as during the greater part of the week we have been engaged inspecting some of the principal Lead Mines in the North of England.

CAPITAL, AND ITS EMPLOYMENT.

SIR,—Although it appears highly probable that the disturbance now taking place on the Continent will be adjusted—temporarily at any rate—without having recourse to arms, I am not able to report any great increase of confidence amongst investors. Whilst there is any uncertainty whatever respecting the above-named issue, it is difficult to induce capitalists, large or small, to invest their money in any class of securities. Nevertheless, it would appear that the present time is an exceptionally favourable one for the profitable employment of capital, as with the widespread depression pervading every branch of enterprise and investment, there are many good substantial securities that are to be bought much under their value—securities which, under the present languid state of affairs, will pay a fair return, whilst their prospective rise in value is only a question of a very short period. Take, for instance, the North-Eastern Railway, with the vast mineral districts through which it passes being in a state of lethargy, the buyer to-day receives over 4½ per cent. for his outlay, with the prospect of a material increase when the trade revives, evidences of which are now daily asserting themselves. Lancashire and Yorkshire pays 4½ on its present price; a line most economically worked, and possessing exceptional advantages by reason of its being situated in the heart of the manufacturing districts, whose products will be amongst the foremost to reap the benefit of increased trade. Midland, paying on present quotations 4½ per cent., will speedily yield much more—portions of the unproductive capital coming constantly into use, and extensions and improvements being made of the greatest benefit to its proprietary. North London is also fairly remunerative, paying at present prices over 4½ per cent., whilst its extensions at the docks, and other improvements now in active progress, point to a very substantial increase in the revenue—in fact, it is looked upon as an embryo 8 per cent. line. I cannot encroach upon further space to particularise other lines, but the fact remains that fair returns may now be made, whilst much larger may be looked for future. I may possibly, before I dismiss this subject, be excused for alluding to what is becoming year by year a greater scandal, and reflects most seriously upon the character of some railway directors: I mean the fact that in the two leading Scotch lines—the Caledonian and North British—the dividends are allowed to be communicated to a chosen few at a period much earlier than it is officially announced to the world—a state of things which ought not to be allowed. I have no hesitation in stating that there were people operating in North British who were posted in the dividend many hours before its announcement. As I write the Caledonian dividend is out at the rate of 7 per cent.

Turning, however, to the subject of "Capital and its Employment," I wish to point out that other securities besides railways offer good inducements to the investor: there is the huge field known as "miscellaneous securities," amongst which, as worthy of special notice, I would instance Southwark and Vauxhall Waterworks, paying about 3½ per cent., but which, for reasons too lengthy to explain here, will undoubtedly see a higher figure, and pay an increased dividend. The National Discount Company, an excellently managed concern, paying at present 4½ per cent., and which will shortly receive an important and influential addition to its directorate, an addition bringing with it a considerable increase to its business. The Imperial Continental Gas Company, a thoroughly solid undertaking, backed up by large reserves, pays nearly 6½ per cent. upon present price, and is worth the attention of all who wish for a good channel for their money. Telegraph Construction, North London Tramways, London General Omnibus

Company, Fore-street Warehouse, together with many of the Lancashire spinning concerns, are also worthy of consideration; and should any of my readers be made by the Journal do not require to be reminded of the rich harvest made by sowing the golden grain in mining enterprise. The profits made in the past are still by judicious selection to be made in the future, but of necessity they should be employed in embarking in those alone which will bear the fullest scrutiny. I would particularly mention Glenroy, which is rapidly improving, and the recent great improvements already reported in these columns; maintaining valuable property in Durham; Tankerville, which has already returned good dividends, and is now looking better than ever, whilst West Tankerville is also investing in Wheel Argal, which has the richest tin lode in the Duchy. In conclusion, I can only urge upon investors the necessity of buying now whilst the present depression exists, but at the same time to only buy into those properties where a thorough investigation can be made. ALFRED E. COOK, 76, Old Broad-street, London, E.C., March 2.

HINTS TO INVESTORS.—In the circular of the London and Continental Exchange (share department) are two interesting articles, one on "The Future of Welsh Lead Mining," and another on "London Brokers." The circular contains much common sense, without anything egotistical, and deserves the attention of investors, especially those likely to or having invested in lead mining shares. Mr. Thompson, the editor and manager, advises all considerate investors not to neglect the Gwennap mining district.

DESIRABLE INVESTMENT FOR CAPITAL. WANTED, A FEW GENTLEMEN, to JOIN in the PURCHASE and WORKING of a PIECE of MINING GROUND in the RICHMOND DISTRICT in ENGLAND. £20,000 worth of mineral has been won from surface, as deep as 40 fathoms. A steam engine of sufficient power to run the property, and pitwork all fixed ready to work. £1500 will be sufficient to put up a rich copper mine. It is proposed to divide it into 50 shares, at £20 each. Early application is necessary to secure it. Apply for shares to Mr. CHAS. BAWDEN, Folicie House, St. Day, Scotland, Cornwall.

WANTED, A PARTNER to WORK with a PRACTICAL SLATE QUARRYMAN, A VERY PROMISING SLATE QUARRY. Slates have been raised of splendid character. Incoming £500. Slates will be made in two months. Full particulars on application to the Manager, Veldw Slate Quarry, Breidden, Knighton.

TO MINING COMPANIES. A YOUNG MAN, at present holding the position of CLERK and DIALLER, will be shortly discharged, and WANTS a SITUATION OF TRUST in a LARGE MINE or MINING OFFICE. Has been bred to Mining, and understands the practical part of the working of mines also. Highest references. Address, "R. T.," MINING JOURNAL Office, 26, Fleet street, London, E.C.

A PRACTICAL MINE AGENT is DESIROUS of an ENGAGEMENT, at HOME or ABROAD. Over 10 years at (Mr. Mason's), SAN DOMINGOS MINES, PORTUGAL. Fully conversant with the Spanish and Portuguese languages, and management of men. Apply to Mr. H. COLLIERSON, 5, Bond-street, Waltham, E.C.

TO BE SOLD, on favourable terms, a MINE, in full working order, containing RICH and INEXHAUSTIBLE BEDS of ARSENIC, ZINC, COPPER, GOLD, SILVER, and other ORES. The arsenic is well known in the market, and commands a ready sale. For particulars, address "Arsenic," Messrs. Deacon's, 154, Leadenhall street, E.C.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Feb. 28—Rheolod	6	413	5 0	Pantlifer Lead Company.
—Great Dyffio	60	14 15	6	Burry Port Company.
March 1—Monydd Gerdul	12	17 13	6	ditto
—Grogwinlon	100	14 17	6	ditto

BLENDE.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Feb. 24—Pandora	25	4 3	5 0	—
28—Cwmbyr	10	3 12	6	Dillwyn and Co.
—ditto	10	3 12	6	Villiers Spelter Co.

COPPER ORES.					
Sampled Feb. 7, and sold at the Royal Hotel, Truro, Feb. 22.					
Mines.	Tons.	Price.	Mines.	Tons.	Price.
Devon Great Consols.	90	£3 0 0	Marke Valley	64	£4 11 6
ditto	84	2 1 0	ditto	62	3 9 6
ditto	84	2 10 0	ditto	35	2 3 6
ditto	75	2 7 6	ditto	33	2 3 6
ditto	73	2 7 6	ditto	24	2 1 6
ditto	64	2 4 6	Glasgow Caradon	75	4 8 0
ditto	60	6 9 0	ditto	74	3 10 0
ditto	59	4 8 6	ditto	59	5 0 0
ditto	59	6 11 0	ditto	59	3 10 6
ditto	45	7 5 0	Hingston Down	84	2 4 6
ditto	45	6 9 0	ditto	64	3 3 6
ditto	31	10 17 6	ditto	31	3 2 0
ditto	29	2 4 6	ditto	23	2 10 6
ditto	27	2 4 6	Gawton	55	2 1 6
ditto	4	2 15 0	ditto	59	1 19 0
South Caradon	64	4 1 6	Phonix	80	2 10 6
ditto	65	4 0 6	ditto	47	4 4 6
ditto	60	4 18 0	East Caradon	73	4 10 6
ditto	58	5 1 6	ditto	47	4 8 6
ditto	50	6 10 6	Holmbush	55	0 3 0
ditto	41	10 12 0	ditto	20	2 9 0
ditto	39	10 5 0	Wheal Russell	75	2 10 6
Marke Valley	90	3 11 0	Gavida's Ore	4	2 13 6

		TOTAL PRODUCE.				
Devon Great Con.	820	£119	2 0	Phoenix	120	£ 635 0
South Caradon	470	2559	11 0	East Caradon	120	538 0
Marke Valley	380	1364	3 6	Holmbush	73	67 5
Glasgow Caradon	270	1080	5 6	Wheal Russell	73	184
Hingston Down	200	549	3 6	Gavida's Ore	4	13 11
Gawton	192	341	9 0			

Average standard	£105 2 0	Average produce	£3 19 0
Quantity of ore	2594	Quantity of fine copper	159 tons 17 cwt.
Amount of money	£240,592 8 0		
LAST SALE.—Average standard	£ 99 10 0	Average produce	£ 75 10 0
Standard of corresponding sale last month	£104 10 0	Produce	6½

COMPANIES BY WHOM THE ORES WERE PURCHASED.					
Names.	Tons.	Amount.	Names.	Tons.	
Vivian and Sons	501½	£2033 9 3	Greenfield and Son	412	2348 1 0
Neveil, Druce, and Co.	441½	1917 9 0	Williams, Foster, and Co.	161	154 8 1
Mason and Elkington	543½	1231 9 4	Charles J. Lambert	101	8 5 6
Sweetland, Tuttle, and Co.	227 5-6	694 3 1			
Total	2624	\$10,509 6 0			

NO SALE on Thursday last, March 1.

COPPER ORES.									
Sampled Feb. 14, and sold at Swansea, Feb. 27.									
Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	Price.	Mines.	Tons.
Betta Cove	108	9½	£6 9 0	Var Ore	90	13½	£9 13 0	Union Ore	94
ditto	107	9½	6 10 0	Portuguese	54	2½	18 18 0	ditto	94
ditto	107	9½	6 9 0	ditto	54	2½	18 18 0	ditto	94
ditto	107	9½	6 10 0	ditto	54	2½	18 18 0	ditto	94
Carracido	83	13½	9 13 0	Cronchane	59	2½	1 18 0	ditto	94
ditto	81	13½	9 13 0	ditto	77	2½	1 18 0	ditto	94
ditto	41	7½	5 7 6	Tigrony Prec.	23	50½	57 18 0	ditto	94
ditto	26	12½	8 18 0	Australian	7	16½	19 18 0	ditto	94
Union Ore	94	4½	2 17 6	ditto	3	19	13 18 0	ditto	94
ditto	94	4½	2 17 6	Copper Ore	4	2	2 18 0	ditto	94

Var Ore	91	10 1/2	9 13 0				
TOTAL PRODUCE.							
Betta Cove	429	£2777	15 0	Cronchane Ore	136	£147	
Carracido Ore	230	2024	14 6	Tigrony Precipitate	23	583	
Union Ore	188	549	10 0	Australian Ore	19	123	13 1/2
Var Ore	181	1739	18 0	Copper Ore	4		3
Portuguese Ore	162	2992	19 0				

COMPANIES BY WHOM THE ORES WERE PURCHASED.				
Names.	Tons.		Amount.	
Nevill, Druce, and Co.	105½	£	942	4 3
Vivian and Sons	569		2,445	1 0
Williams, Foster, and Co.	350		2,533	9 0
Mason and Elkington	217½		1,084	19 0
Landore Smelting Company	121		1,254	3 6

Total	1963	£11,232 17			
TOTALS AND AVERAGES.					
31 cwt.	Produce.	Price.	Per unit.	Standard	
Whole sale	1363	1174	£ 9 4 9	148.43	£ 9 0 0

MARCH 3. 1877.

THE IRON AND STEEL INSTITUTE.

ANNUAL MEETING, 1877.

PRELIMINARY ANNOUNCEMENT.

THE ANNUAL MEETING will be HELD in LONDON, commencing TUESDAY, March 20th, 1877.

OUTLINE PROGRAMME.

TUESDAY, MARCH 20.—Annual Meeting for receiving Report of Council, electing Officers and Members, and for routine business.
WEDNESDAY, MARCH 21.—Inaugural Address of the President, C.W. Siemens, Esq., F.R.S., &c. Reading and discussion of papers.
THURSDAY, MARCH 22.—Reading and discussion of papers.
The Institute is desirous of contributing papers, or of introducing subjects for discussion, at this meeting are requested to give early notice to the undersigned. Owing to the lamented death of Mr. Forbes, some delay will unavoidably take place in issuing the next number of the Journal, but it is expected to be published in the course of a few weeks.
The Council are open to receive communications from non-members.
A detailed programme will be issued in due course.

JNO. JONES, General Secretary.

BRITISH IRON TRADE ASSOCIATION.

ANNUAL GENERAL MEETING, 1877.

THE BOARD OF MANAGEMENT hereby give notice that the FIRST ANNUAL GENERAL MEETING of the Association will be HELD in LONDON on FRIDAY, March 3rd, 1877.
The Board will present a report of the proceedings of the Association since its establishment. Various subjects bearing upon the Iron and Steel Trades will be brought forward for discussion, but before issuing the programme for the meeting the Board are desirous of ascertaining if any member wishes to read a paper, or to propose a subject for discussion at this meeting. If so, particulars should be sent as early as convenient to the Secretary.
The Association is open to consider any subject that may be of National, as distinguished from local, importance to the Iron Trade in its several branches.
JNO. JONES, Secretary.
Westminster Chambers, Victoria-street, London, S.W., Feb. 1, 1877.

MADRAS TRAMWAYS COMPANY (LIMITED).

IN LIQUIDATION.

THE LIQUIDATOR is PREPARED TO RECEIVE APPLICATIONS FOR THE PURCHASE OF THIS UNDERTAKING.
For full particulars, apply to Mr. GEORGE BROOM, Liquidator, 53, Coleman-street, London, E.C.

THE DEVONPORT AND TIVERTON BREWERY COMPANY (LIMITED).

Notice is hereby given, that a QUARTERLY INTERIM DIVIDEND, at the rate of FIVE PER CENT. PER ANNUM, will be PAYABLE at the offices of the company, No. 1, Palmerston Buildings, London, E.C., on and after 15th March next.
By order of the Board,
W. H. HARRISON, Secretary.

BLACKWELL PARK RED HEMATITE IRON AND COAL MINING COMPANY, CARLISLE (LIMITED).

A GENERAL MEETING of this company will be HELD at their office, 26, New Broad-street, London, E.C., on MONDAY, March 5, at Four P.M.
By order, C. RICHARDS, Secretary.

ROMAN GRAVELS MINING COMPANY (LIMITED).

Notice is hereby given, that the Directors have this day DECLARED a DIVIDEND of 65/100 of Income tax, being EIGHT SHILLINGS AND SIX PENCE PER SHARE on the 12,000 shares of the company, PAYABLE on and after Wednesday, the 28th of March, to shareholders on the books of the company at 15th, March instant. Due notice of the adjournment meeting will be given.
By order of the Board,
F. F. WILSON, Secretary.

DIVIDEND FOR FEBRUARY, 1877.

NOTICE IS HEREBY GIVEN, that the DIRECTORS of HOLMBUSH (LIMITED) have DECLARED a DIVIDEND of SIX PENCE PER FULLY PAID SHARE for the month of February, 1877, and that Holders of Share Warrants can obtain payment of the same on application to me, at 15, Palmerston Buildings, Bishopsgate-street, London, E.C., on and after the 15th day of March instant.
By order of the Board,
S. BOOME, Registrar.

SOUTH AURORA CONSOLIDATED MINING COMPANY (LIMITED).

Notice is hereby given, that the ORDINARY GENERAL MEETING of the directors of the South Aurora Consolidated Mining Company (Limited) will be HELD at the offices of the company, No. 17, Abchurch-lane, in the City of London, on WEDNESDAY, the 7th day of March, 1877, at Two o'clock in the afternoon, for the Election of Directors in the place of those retiring by rotation; the Election of Auditors; and for the transaction of the other general business of the company; but, inasmuch as the accounts have not yet been received by the Board from the Agent in Nevada of the disbursements there, the Meeting will be held pro forma only, and will be adjourned for a period of two months, in order to assist their accounts being obtained. Due notice of the adjournment meeting will be given.
By order of the Board,
CHAS. CADOGAN, Secretary.

NOUVELLE MONTAGNE COMPANY, BELGIUM.

The ANNUAL GENERAL MEETING of the Shareholders will be HELD at the Hotel d'Angleterre, Liège, on the 7th APRIL next, at One o'clock P.M.

GOLDENHILL COBALT, NICKEL, COLOUR, BORAX, AND CHEMICAL WORKS.

NEAR STOKES-UPON-TRENT, STAFFORDSHIRE
JOHN HENSHALL WILLIAMSON, MANUFACTURER AND REFINER
Purchaser of Borate of Lime and Tincal.

NICKEL AND COBALT REFINING, AND GERMAN SILVER WORKS, 16, OZZELL STREET NORTH, BIRMINGHAM.

STEPHEN BARKER begs to inform the Trade that he has the following articles for sale:—REFINED METALLIC NICKEL.
REFINED METALLIC BISMUTH.
OXIDE OF COBALT.
GERMAN SILVER—IN INGOTS, SHEET, WIRE, &c.
NICKEL AND COBALT ORES PURCHASED.

SULPHATE OF BARYTES FOR SALE.

Fine powdered, beautifully white; also in the Rock or Crude State, free from Lime and Metallic Oxide.
Samples on application to—
RUTH WAITE BARYTES MINING COMPANY, WHITEHAVEN.
Nov. 17, 1875.

THE FOURTH EDITION OF MITCHELL'S ASSAYING.

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A MANUAL OF PRACTICAL ASSAYING.

By JOHN MITCHELL, F.C.S.

Fourth edition, in which are incorporated all the recent valuable improvements in Assaying made in this country and abroad; including Volumetric and Colorimetric Assays, and the Blowpipe Assays. Edited and for the most part re-written by WILLIAM CROOKS, F.R.S., &c.

"The fourth edition of Mitchell's well-known work is calculated to add to Mr. Crooks's high reputation as an analytical chemist. The work, as it now stands, may safely be taken as a guide by buyers of ores, by assayers, and by all persons engaged in the industry of chemical manufacture."—Mining Journal.

London: LONGMANS and Co.

SEVENTH EDITION, by ROBERT HUNT, F.R.S.

In Three Volumes, medium 8vo., with above 2000 Woodcuts, price 25 5s. cloth. or 26 6s. half-bound in Russia.

URE'S DICTIONARY OF ARTS, MANUFACTURES, AND MINES.

Containing a Clear Exposition of their Principles and Practice. Seventh edition, rewritten and enlarged.

Edited by ROBERT HUNT, F.R.S., Keeper of Mining Records.

Assisted by numerous Contributors eminent in Science and familiar with Manufactures.

"The great point in a Dictionary like Dr. Ure's is to include all that is really essential without rendering the result too bulky, and consequently too costly. This end, we think, the Editor and his staff of eminent Contributors have reached to a very satisfactory degree. The Seventh Edition is a book which no manufacturer, merchant, miner, or technologist should be without."—Quarterly Journal of Science.

* VOL. IV. SUPPLEMENTARY, completing all the Departments of the Dictionary to the beginning of the present year, will be published in the Autumn.

London: LONGMANS and Co.

Price Two Shillings.

A FEW NOTES ON THE PORTABLE STEAM ENGINE; WITH AN ACCOUNT OF ITS CONSTRUCTION AND GENERAL ADAPTATION.

By JOHN HEAD, Assoc. Inst. C.E.

Published by E. and F. N. SPON, 49, Charing Cross, London.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the EAST WHEEL GRENVILLE MINING COMPANY.—By an Order, made by His Honor the Vice-Warden of the Stannaries, in the said Matter, dated the 23rd day of February instant, on the Petition of George Bazeley, of Penzance, within the said Stannaries (carrying on business at Penzance aforesaid, under the style or firm of "George Bazeley and Son," as General Merchants, and as such claiming to be creditors of the said Mining Company), IT WAS ORDERED that the said East Wheel Grenville Mining Company should be WOUND-UP by the Court, under the provisions of the Companies Act, 1862.
HODGE, HOCKIN, AND MARRACK, Truro (Solicitors for the said Petitioner).

Dated Truro, 24th February, 1877.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the EAST WHEEL GRENVILLE MINING COMPANY.—The Vice-Warden has, by an Order made in the above Matter, bearing date the 23rd day of February instant, APPOINTED CHARLES WILLIAM CLINTON, of Truro, within the said Stannaries, an Officer of the said Court, to be absolutely the OFFICIAL LIQUIDATOR of the above named Company.
FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, 24th February, 1877.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the EAST WHEEL GRENVILLE MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the above named company are required, on or before the 10th day of March next, to SEND in their NAMES and ADDRESSES, and the AMOUNTS and PARTICULARS of their SEVERAL CLAIMS, to CHARLES WILLIAM CLINTON, the Official Liquidator of the said company, at the Stannaries Court Office, in Truro, within the said Stannaries.
FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, 24th February, 1877.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the BOSWORGEY MINING COMPANY.—By an Order, made by His Honor the Vice-Warden of the Stannaries in the said Matter, dated the 22nd day of February instant, on the Petition of William Rosewarne, of Ledestown, in the parish of Crowan, within the said Stannaries, the Purser and Principal Agent, and claiming to be also a creditor of the said company, IT WAS ORDERED that the said Bosworger Mining Company should be WOUND-UP by this Court, under the provisions of the Companies Act, 1862.
HODGE, HOCKIN, AND MARRACK, Truro (Solicitors for the said Petitioner).

Dated Truro, 23rd February, 1877.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the BOSWORGEY MINING COMPANY.—The Vice-Warden has, by an Order made in the above Matter, bearing date the 22nd day of February instant, APPOINTED JOHN HENRY HAMLEY, of Truro, within the said Stannaries, an Officer of the said Court, to be absolutely the OFFICIAL LIQUIDATOR of the above named company.
FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, 23rd February, 1877.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the BOSWORGEY MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the above named company are required, on or before the 10th day of March next, to SEND in their NAMES and ADDRESSES, and the AMOUNTS and PARTICULARS of their several claims, to JOHN HENRY HAMLEY, the Official Liquidator of the said company, at the Stannaries Court Office, in Truro, within the said Stannaries.
FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, 23rd February, 1877.

MONDAY, TUESDAY, AND WEDNESDAY,

MARCH 12th, 13th, and 14th, 1877.

IMPORTANT SALE OF VALUABLE MINING PLANT AND MATERIALS, At the CRENVER AND WHEEL ABRAHAM UNITED MINES, in CROWAN, CORNWALL.

MR. W. J. JOHNS is instructed to SELL, BY AUCTION, on Monday, Tuesday, and Wednesday, the 12th, 13th, and 14th days of March next, at the CRENVER AND WHEEL ABRAHAM UNITED MINES, in the parish of CROWAN, in the county of CORNWALL, the whole of the valuable

MINING PLANT AND MATERIALS, thereon:—

Consisting of powerful PUNCHING MACHINE, screwing stock complete, 3 large double purchase winches, 8 arm capstan, about 20 tons rail iron, several tons of chain; large capstan ropes, about 1600 fms.; 3 1/2 in. steel wire rope; 30 ft. water wheel, 3 ft. 4 in. breast; 11 ft. water wheel, 3 shafts, large and small pulleys and stands, several wood sheds, picking tables, jiggling hutchies and sieves, large and small scales, about a ton of weights, several squares of flooring, buddies, knives, 2 large wood tin hutchies, ladders, gratings, 6 lbs. lithofractor, 50 lbs. tonite, &c.

10 ft. 18 in. windbore. 16 ft. 18 in. doorpiece.

19 ft. 12 in. plunger pole. 16 ft. 19 in. doorpiece.

29 ft. 15 in. pumps. 16 ft. 18 in. windbore.

112 ft. 15 in. working. 16 ft. 16 in. stuffing box.

10 ft. 15 in. windbore. 21 ft. 15 in. matching.

23 ft. 15 in. matching. 112 ft. 16 in. plunger pole, stuffing box and gland.

19 ft. 8 in. pump. 16 ft. 15 in. top doorpiece.

69 ft. 19 in. pump. 16 ft. 14 in. windbore.

212 ft. 19 in. pump. 11 ft. 13 in. matching.

112 ft. 16 in. pump. 11 ft. 11 in. matching.

114 ft. 17 in. bucket working. 16 ft. 16 in. doorpiece.

16 ft. 18 in. doorpiece.

IN MATERIAL HOUSE.—Smith's bellows, Indian rubber valves, butt, about 3 tons of steel borer, steel mallets and sledges, about 15 cwt. of brass bearings and valves, several tons of new and old ropes, lot of safety, several hundredweights of patent nails, new and old sheet lead, grease, oil, hilt, wire rope, old files, &c.

IN SMITH'S SHOP.—40 in. smith's bellows, 6 anvils, 3 large cranes, vice, mandrills, tongs, punches and swedges, rod pins, kibble moulds and plates, bolt tools, several tons of new and useful iron, spanners, force cranes, &c.

IN FITTING SHOP.—Large crane with winch attached, several treble, double, and single iron blocks, boiler tester, vice, 3 lifting jacks, 1 hydraulic dolly, chains, bolts, burrs, &c.

IN CARPENTERS' SHOP.—About 100 ft. carpenters' benches, sawing tools, crowbars, cant hooks, lot of wheel and hand barrows, piece of 19 in. pitch pine, grinding stones and frames, Norway bark, useful timber, &c.

Also a wrought iron steam drey tube, 54 ft. by 3 ft. 6 in., miners' chests, &c.

Also an excellent windmill bridge, by Huxham and Brown, calculated to weigh 10 tons, together with a small quantity of tin leadings, and a very large assortment of other materials and effects suitable for mining purposes.

The Auctioneer respectfully invites the particular attention of merchants, mine agents, and others to the above very valuable mining plant and materials, the whole of which was carefully selected at an enormous outlay, and will be found on inspection to be in good condition. The roads to the mines are convenient, and every facility is afforded by land carriage.

Sales to commence each day at Eleven o'clock.

For catalogues to view, and for further information, apply on the mines; or to Mr. ALFRED GOOD, New Poultry Chambers, 7, Poultry, London; or to the Auctioneer, Truro.

All the PUMPING, WHIM, and other ENGINES, BOILERS, CALCINER, PNEUMATIC STAMPS, CRUSHER, and other MACHINERY are to be DISPOSED OF BY PRIVATE TREATY.

For particulars and price apply to the said Mr. Good, or to the Auctioneer. Dated February 14th, 1877.

VALUABLE MINING PROPERTY FOR SALE.

PRELIMINARY ADVERTISEMENT.

THERE WILL BE SOLD, BY PUBLIC AUCTION, within the Chambers of the Liquidator, 115, Wellington-street, Glasgow, on Friday, the 22nd day of June, 1877, at Twelve o'clock noon, the PROPERTY of

THE CONCORDIA COPPER COMPANY.

IN LIQUIDATION.

As situated in Namaqualand, in the Colony of the Cape of Good Hope. The property consists of—(1). The Leases of about 380 acres of Land, containing Five Mines which have been partially worked and explored.—(2). The Buildings at the Mines, consisting of manager's residence, offices, blacksmiths' shops, stables, &c.—(3). Three ranges of buildings, containing workmen's houses, stores, &c.—(4). Machinery, consisting of horizontal engine, water lift, pumping gear, &c.

The Liquidator is also PREPARED TO SELL the office and house furniture, the stores of wood, iron, steel, rope, and mining utensils (the latter amounting as per inventory to about £2000), and the purchaser of the above will have the option of acquiring these at a valuation or otherwise, as may be arranged.

For further information, apply to JAMES MACROBBIE, Liquidator, 115, Wellington-street, Glasgow.

FOR SALE, at NEW PEMBROKE MINE, near PAR STATION, CORNWALL.

An excellent 80 in. cylinder PUMPING ENGINE, 12 ft. stroke in cylinder and 10 ft. in shaft, with cast-iron balance bob, and FOUR 12 ton BOILERS, in good condition.

ONE 25 in. DRAWING ENGINE, and TWO BOILERS.

ONE 20 in. STAMPING ENGINE, with three iron stamps' axles, carrying 32 heads, and TWO BOILERS.

Also, OTHER GOOD MINE MATERIALS.

Apply to—
MR. JOHN POLKINGHORNE, PAR OFFICE, PAR STATION.

BY ORDER OF THE DIRECTORS OF THE MORBEN SLATE AND SLAB COMPANY (LIMITED).

A VALUABLE LEASEHOLD SLATE QUARRY, situate three miles from MACHYNLLETH, MONTGOMERYSHIRE, and on the high road to Aberystwyth, containing an AREA of upwards of SEVENTEEN ACRES, and held for an unexpired term of 31 years, renewable for 40 years, at a royalty of one fifteenth.

Messrs. GREEN AND SON beg to announce that the above property was NOT SOLD at the auction, and may now be treated for by private contract. Auction and Survey Offices, 10, St. Swithin's-lane, London.

FOR SALE—PRICE £3000.

RED HEMATITE IRON ORE MINE—LIMESTONE FORMATION, near COAL MEASURES. The ore is identical in character with that produced in West Cumberland and North Lancashire, and there is (in South Staffordshire) a good market for it at net prices, equal to those realised for the ores of these districts. Payments easy to a good buyer.

Apply to Mr. J. FLETCHER-PAGEN, C. and M.E., Bodmin.

FOR SALE—PRICE £2500.

HEMATITE IRON ORE MINE—near railway and shipping port. Easy terms of payment to good buyer.

FOR SALE—PRICE £4000.

VALUABLE CHINA-SLAY AND FIRE-BRICK WORKS—Payments easy to a good buyer.

For particulars, apply to Mr. J. FLETCHER-PAGEN, C. and M.E., Bodmin.

IN VOLUNTARY LIQUIDATION UNDER THE COMPANIES ACT, 1862.

THE NEW LLANGYNOG LEAD MINING COMPANY (LIMITED).

TO BE SOLD, BY PRIVATE TREATY, ALL the BENEFICIAL INTEREST of the New Llangynog Lead Mining Company (Limited) in the LLANGYNOG LEAD MINES, comprising all the valuable, productive, and extensive mines, veins, beds of lead, ores of lead, and other metals and minerals known collectively as the Llangynog Lead Mines, and in the reservoir, water-supply rights, easements, and interests thereto belonging, situate in the several parishes of Llangynog, Llanrhaidry-n-Mochnant, Hiranant, and Pennant, in the county of Montgomery; and also the WHOLE of the movable PLANT and MACHINERY of the said company.

The Llangynog Lead Mines have been a highly productive and dividend-paying property.

The mines, machinery, and plant are in working order, and considerable quantities of ore are now being raised.

The works may be inspected at any time upon application to the Manager at the Mines. The leases and agreements may be inspected at the offices of Messrs. LONGUEVILLE, JONES, and WILLIAMS.

All further information may be obtained, and maps of the property inspected on application to Messrs. GEO. HASWELL and SONS, 84, Foregate-street, Chester, to HENRY DENNIS, Esq., Mining Engineer, Hafod-y-Buch, Ruabon; or to Messrs. LONGUEVILLE, JONES, and WILLIAMS, Solicitors, Oswestry.

IRON ORE ROYALTY IN CUMBERLAND TO BE LET.

TO BE LET, BY TENDER, for a term of years, the ROYALTIES of IRON ORE under 42 acres or thereabouts of FREEHOLD LAND at Todholes, Cleator Moor, and under 11 acres or thereabouts at Cowdridges Egremont, both in the county of Cumberland.

These royalties are situated in the immediate neighbourhood of some of the most productive mines in the Cleator district, and within a short distance from the Whitehaven, Cleator, and Egremont Railway.

A considerable quantity of ore has been raised from the Todholes royalty, of which only a small portion has been proved.

Tenders for each royalty will be received up to 23rd March by Messrs. LUMB and HOWSON, and Mr. J. R. MURRAY, Solicitors, Whitehaven, from whom further information may be had.—Whitehaven, 28th February, 1877.

MINING PROPERTIES FOR SALE.

SEVERAL bona fide BROWN HEMATITE, MANGANIFEROUS IRON, and SILVER-LEAD MINES, situated in the Province of MURCIA, SPAIN, TO BE SOLD.

Apply to Sr. D. JOSE BOWDON, Del Comercio, Cartagena.

FOR SALE, or LEASE, GALVANISED IRON and STONE SHEDS, in SOUTH DOCK, SWANSEA, alongside Wharf and Rail, and suitable for Warehousing Metals, Minerals, Esparto, and other fibres, &c. To view, apply to Mr. D. WILLIAMS, 56, Argyle-street, Swansea. For terms, to "A. B." Messrs. Pottle and Son, Royal Exchange Buildings, London, E.C.

SLATE QUARRY.

FOR SALE, a SLATE QUARRY, in NORTH WALES, in working order. The quality of the SLATE is GOOD, and the supply practically inexhaustible. Suitable either for private investment or for a company.

For full particulars, address, "Delta," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

ON SALE:—

ONE 70 in. cylinder single acting PUMPING ENGINE.

ONE 30 in. ditto ditto

ONE 22 in. WINDING ENGINE.

ONE 18 nominal horse power PORTABLE ENGINE.

Several CORNISH BOILERS, PITWORK, STRAPPING PLATES, CAPS, &c., and various other spare MINE MATERIAL. Also, one large BALANCE BOB.

Apply to—
WILLIAM TREGAY, REDRUTH, CORNWALL.

FOR SALE, a 18-horse power PORTABLE STEAM ENGINE,

with link motion reversing gear, ready for delivery.

A 25-horse power PORTABLE.

An 18-horse power VERTICAL STEAM ENGINE, with nk motion reversing gear, also gear to wind and pump.

A 9 ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER.

Apply to—
BARROWS AND STEWART, ENGINEERS, BANBURY.

ON SALE, TWO CORNISH BOILERS, 30 ft. by 7 ft. diameter

Two flues through each. Safe at 60 lbs. pressure working.

Apply to HENRY PARKINSON, Foundry-street, Bolton.

ON SALE, ONE PAIR of 18 in. high-pressure HORIZONTAL

ENGINES, for winding, fitted with slot link motion. First-class pair of engines.

Apply to HENRY PARKINSON, Foundry-street, Bolton.

ON SALE, ONE PAIR of 15 in. HORIZONTAL WINDING

ENGINES, with slot link motion. Will be sold cheap.

Apply to HENRY PARKINSON, Foundry-street, Bolton.

ON SALE, ONE 25-horse power double cylinder PORTABLE

ENGINE, fitted with slot link motion for winding.

ONE 20-horse power double cylinder PORTABLE ENGINE.

Will be sold cheap, and are in first-class order.

Apply to HENRY PARKINSON, Found

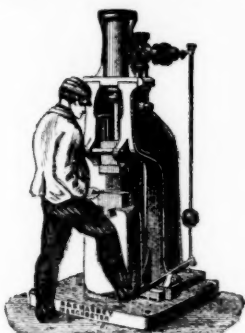
B. & S. MASSEY, OPENSHAW, MANCHESTER.

Prize Medals—Paris, 1867; Havre, 1868; Highland Society, 1870; Liverpool, 1871; Moscow, 1872; Vienna, 1873; Scientific Industry Society, 1875; Leeds, 1875; Paris, 1875; Manchester and Liverpool Society, 1876; U.S. Centennial, Philadelphia, 1876.

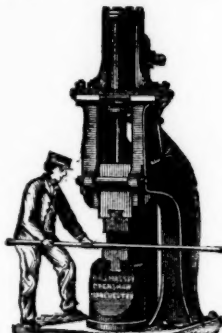
PATENTEES AND MAKERS OF DOUBLE AND SINGLE-ACTING

STEAM HAMMERS

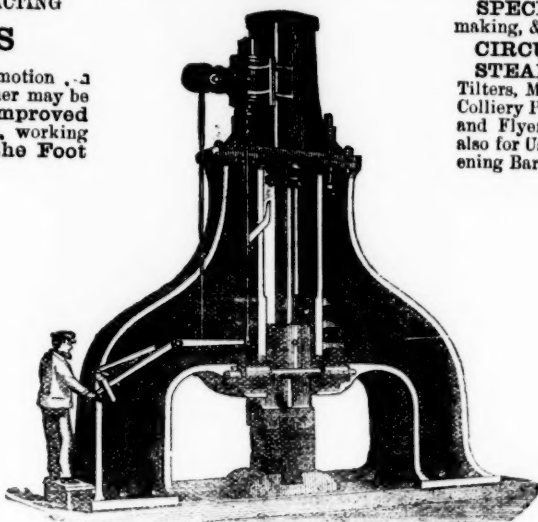
Of all sizes, from $\frac{1}{2}$ cwt. to 20 tons, with self-acting or hand motion, in either case giving a perfectly DEAD BLOW, while the former may be worked by hand when desired. Large Hammers, with Improved Framing, in Cast or Wrought Iron. Small Hammers, working up to 500 blows per minute, in some cases being worked by the Foot of the Smith, and not requiring any separate Driver.



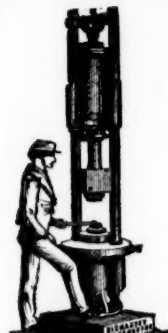
Small Hammer with Foot Motion.



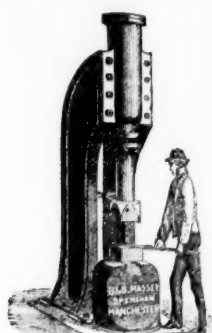
General Smithy Hammer.



Steam Hammer for Heavy Forging.



Special Steam Stamp.



General Smithy Hammer.

SPECIAL STEAM STAMPS, for Forging, Stamping, Punching, Bolt making, &c.

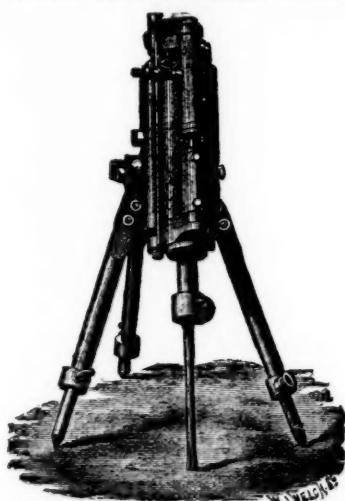
CIRCULAR SAWS for Hot Iron.

STEAM HAMMERS for Engineers, Machinists, Shipbuilders, Steel Tilters, Millwrights, Copper-smiths, Railway Carriage and Wagon Builders, Colliery Proprietors, Ship Smiths, Bolt Makers, Cutlers, File Makers, Spindle and Flyer Makers, Spade Makers, Locomotive and other Wheel Makers, &c., also for Use in Repairing Smithies of Mills and Works of all kinds; for straightening Bars, bending Cranks breaking Pig-iron, &c.

From 60 to 100 Steam Hammers and Steam Stamps may usually be seen in construction at the Works.

“Champion” Rock Borer,

For Tunnels, Mines, Quarries,
HARBOUR WORKS, CUTTING BLOCKS OF GRANITE, &c.



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| 1.—EFFICIENCY. | 5.—ADJUSTABILITY. |
| 2.—ECONOMY. | 6.—PORTABILITY. |
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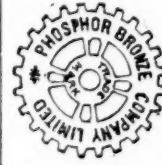
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